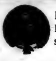

IS managers can take their cue from The Money Store's Bob Schillato (at left): Emphasize software quality. Managing, page 75

CA's Opal melds legacy and SOL data for intranet applications
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COMPUTERWORLD

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Users caught in Java cross fire

▸ Although they want a cross-platform standard, many worry about supporting their Windows PCs

By Sharon Gaudin and Laura DiDio

THE ESCALATING cross fire between Microsoft Corp. and Sun Microsystems, Inc. over the future of Java has customers pinned down. While their hearts may be with Sun and its efforts to standardize the popular programming language, users interviewed last week acknowledged that, in the end, they may have to support two separate environments.

Many users want a platform-independent application development language that can take them across the Internet and back into their legacy applications. But they also need to work with their huge Windows installed base, and Microsoft appears bent on offering a different route to cross-platform accessibility.

WORLDS APART

The breach-of-contract lawsuit that Sun filed against Microsoft last week only highlights the growing distance between the two worlds (see story, page 16) at a time when users are pressing for unity.

Several users, including Mary Lasky, supervisor of information

Cross fire, page 16

By Julia King **A recently hired foreign-born computer professional abruptly quits to take a better-paying job at another employer. His former company is now stuck for the thousands of dollars it spent obtaining the worker's visa or residency card.**

Every month, Washington immigration attorney Rajiv Khanna hears

Foreign labor, page 112

Ramesh Doraiaj switched jobs after seven months

Postage due for E-mail

By Barb Cole-Gomolski

CHARGEBACK PLANS

PHIL USHER recently sent out an unpopular memo informing business units that they would soon pay extra depending on how much E-mail they kept in private mail files.

But since the memo went out, results have been promising. "We've seen a reduction of more than 40,000M bytes of [old electronic mail]," said Usher, senior vice president of messaging at Countrywide Home Loans, Inc. in Calabasas, Calif. That's enough mail to fill a server.

Usher isn't alone. Messaging

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Software could spoof-proof domain names

By Sharon Machlis

IN AN EFFORT to cut down on spoofing and spam attacks, a group that oversees part of the Internet infrastructure soon will release free software designed to make domain names more tamper-resistant.

DNSsafe, donated to the Internet Software Consortium by cryptography company RSA Data Security, Inc., uses RSA's digital signature technology to verify Internet domain names.

The idea is to prevent hackers from messing with domain databases that match names, such as bank.com, with specific IP addresses. The consortium hopes DNSsafe will be deployed across much of the Internet within a year.

Software, page 14

CHRIS HARTLOVE

Leonid Z. Batkhan launched a start-up in the former Soviet Union but decided to come to the U.S. rather than pay bribes

Russian coders shine, fill IS talent gaps

The former Soviet Union is overflowing with underemployed software engineers, not to mention assorted rocket scientists and Ph.Ds. That's good news for labor-hungry U.S. firms, which can snap up these superprogrammers.

Many Russian programmers have advanced degrees, mathematical prowess and a resourcefulness that comes from working with primitive hardware. And some are eager to flee a culture of anti-Semitism and corruption. But be warned: There are some management challenges, including language barriers and culture shock.

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IT managers everywhere: sharpen your scissors.

A wireless network boosts New Jersey parking ticket payments. Servers & PCs, page 67

IS pros with "soft skills" reveal why you need them, too. Careers, page 91

Business needs drive users such as Jim Poole to buy troubled vendors. Corporate Strategies, page 30

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Informix rallies users with database revamp

By Craig Stedman

AFTER SEVEN months of damaging financial disclosures and management shake-ups, Informix Software, Inc. is trying to put the focus back on its database technology.

Sources said Informix is lining up users to beta-test an upgrade of its flagship OnLine Dynamic Server that is due for release early next year.

Despite its status as Informix's biggest seller, OnLine Dynamic Server earlier this year was relegated to second fiddle behind the new object-enabled Universal Server — a marketing faux pas that took much of the heat for the company's ongoing financial meltdown.

By year's end, Informix also is expected to ship a version of its analysis-oriented OnLine XPS parallel database with new support for Windows NT. And the Menlo Park, Calif., company is putting the finishing touches on a product repackaging aimed at reducing the distinctions between its different databases and simplifying purchases for users.

Taking some confusion out of the buying process would be a good way for Informix to start repairing its image with users, said Mike Baxter, assistant division chief of database management at the Maryland State Highway Department's planning office in Baltimore.

MIND-BOGGLING

"I've been a customer of theirs for years, and even I don't understand [the packaging] at times," Baxter said. "Everything comes in pieces, and there are too many of them floating around." Baxter's office uses OnLine Dynamic Server to run traffic monitoring and highway management applications.

Industry sources said Informix is looking at packaging each of its databases as a core engine with a menu of optional add-on products. Informix officials wouldn't comment directly but confirmed that the company's product lineup will become less fragmented than it is now.

Meanwhile, the upcoming OnLine Dynamic Server 7.3 upgrade is expected to include features aimed at making it easier to learn for developers and database administrators who are familiar with market kingpin Oracle Corp.'s software.

"The flexibility it's adding is something that we've been looking for from Informix for a long time," said Janice Richardson, manager of the systems and operations division of the city of Aurora, Colo. "It's not as hard to find Oracle developers as it is to find people who know Informix."

A successful technology rollout would send a needed signal to users and application vendors that Informix "is still out there," said Richardson, who is a member of the International Informix Users Group's leadership council.

Most of the publicity Informix has had since April has been financial in nature and bleak: The company reported a $260.6 million loss for the first half of this year, and it acknowledged last month that nearly a third of last year's software sales might be wiped away as part of a financial results restatement that will reach back into 1995 [CW, Sept. 29].

Informix needs to show users that it isn't "sitting around and wringing its hands," said Carl Olofson, an analyst at International Data Corp. in Framingham, Mass. "They've got to get people looking at their technology again." ☐

INFORMIX'S DATABASE ROSTER

Database	Features
OnLine Dynamic Server	**Multiprocessor database for mainstream transaction and analysis applications**
OnLine XPS	**Parallel database for large-scale data warehousing projects**
Universal Server	**Object-enabled software that supports complex data relationships and multimedia**

UPFRONT

End the free ride

It's time for Microsoft to start charging for its Internet Explorer.

The move is inevitable, so why not do it now and stem the growing alarm over Microsoft's march to Internet dominance? Six states are investigating Microsoft for antitrust violations. Consumer advocate Ralph Nader last week announced with much fanfare a conference to bash Microsoft's business practices. Sun is suing.

The concern is warranted. Microsoft's efforts to use its wealth and market power to buy its way into browser supremacy are working. A *Computerworld* survey late last month showed that Microsoft stands to overtake Netscape in corporate market share sometime next year. Internet Explorer 4.0 is so intertwined with the Windows operating system that rival Netscape can't hope to keep up. Feature for feature, Netscape is chasing Microsoft and charging for it.

Netscape can't possibly win this battle. The drop in the company's stock has depleted its capital resources, and it faces considerable competition in the server market. Its recently announced initiative to drive 100 million copies of Navigator to market can't possibly work and smacks of desperation. Netscape is being driven further into a niche.

If Microsoft succeeds in dominating both the desktop and the window to the Internet, the government will have no choice but to intercede. And its case will be so good that even the Justice Department can't screw it up.

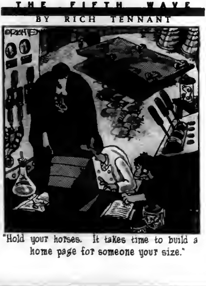
So why not avoid the whole mess and just start charging for Internet Explorer? Such a move would reset the competitive clock, let Netscape maintain a fighting chance and deflate the mounting pressure from the government.

It also would force Microsoft to compete on features alone, a battle it could certainly win without resorting to anticompetitive tactics.

Paul Gillin, *Editor*
Internet: *paul_gillin@cw.com*

THE FIFTH WAVE

BY RICH TENNANT



"Hold your horses. It takes time to build a home page for someone your size."

E-mail Rich Tennant at the5wave@tiac.net

Delays strike Lotus

▸ *Users calm over Notes, Domino setback*

By Barb Cole-Gomolski
San Francisco

IT ISN'T THE way customers usually react to product delays, but some Lotus Development Corp. users were relieved last week to hear that they won't see electronic-mail upgrades until the middle of next year.

The Cambridge, Mass., unit of IBM planned to ship the Notes 5.0 client and Domino 5.0 server at the end of this year and in January, respectively. But Lotus now is aiming for next summer for both, partly because it needs to integrate Microsoft Corp.'s World Wide Web browser.

Users here at the Domino Developers Conference said the delay was OK because the Notes 5.0 client will bring a major user interface change, which requires long-term planning.

And users said that if the 5.0 products had stayed on schedule, they would have arrived too close to the 4.6 releases, which only recently became available.

Information systems managers at the conference were concerned about the reaction of Notes users to the 5.0 client, which abandons the familiar Notes tiles and presents information to users in a way that closely resembles a Web page.

"[Notes] 5.0 will be a big leap," said Michael McGhee, director of administrative computing at the University of Las Vegas, which has a campuswide license for Notes. McGhee said he doesn't mind the delay because he expects to do the Notes 4.6 upgrade and "doesn't want to throw too much at end users at once."

DOING IT RIGHT

Most customers here said Lotus is moving in the right direction by making its client software easier to use and better integrated with the Internet Explorer browser. "But that new user interface will be a big change, and some end users are very resistant to change," said Alexander Lahoski, a Notes developer at Pratt & Whitney in East Hartford, Conn.

But the 5.0 products are sure to be a boon for developers because the releases are the first that will let developers write one application that can run on Web browsers or Notes clients with virtually no changes.

David Marshak, an analyst at Patricia Seybold Group in Boston, said the delay is a double-edged sword for Lotus. In general, current customers don't mind if a new release is delayed, he said. "In fact, it's a benefit to many who have just done an upgrade and need to plan their next one," Marshak said.

But Lotus risks upsetting another segment of its customer base if it holds back too long on Version 5.0, Marshak said. Those users are skipping the Notes 4.6 upgrade in anticipation of the 5.0 release. "If [another delay] pushes them too far back, that may frustrate [users]," he said.

Lotus officials attributed the delay of Notes 5.0 in part to the company's desire to integrate with Microsoft Corp.'s Windows 98 desktop.

Eileen Rudden, senior vice president of Lotus' communications division, said, "Companies want to get out of the business of doing end-user training, and [Notes 5.0] will let them do that." ☐

Staff writer Gordon Mah Ung contributed to this story.

Java-based suite set for year's end

By Gordon Mah Ung

Lotus Development Corp. said it delayed the release of its Java-based applet suite to later this year so it can fine-tune the user interface and build in the latest Java components.

Lotus denied a report that the release would slip into next year.

Kona WorkPlace, a set of basic productivity applications designed to run on thin clients, originally was scheduled to be generally available in late September.

Lotus officials now say WorkPlace will be available late next month or in early December.

Adam Banker, a spokesman at Lotus, said Kona is on schedule despite statements by a product manager last week that WorkPlace's release might slip into early next year.

WorkPlace incorporates light versions of a spreadsheet, word processor, electronic-mail client, calendaring and scheduling, project management and presentation applications.

Analysts said the delay shouldn't impact Lotus or IBM too badly.

Greg Blatnik, a vice president and analyst at Zona Research, Inc. in Redwood City, Calif., said the delay wasn't a surprise. "I think they would prefer to have this available sooner rather than later, but I think there are probably some issues in overall robustness and preparedness in releasing this to the market," he said.

"It's not an earth-shattering event either positively or negatively. It is something that holds IBM back a bit from this big network computing initiative that they've been talking about for some time," Blatnik said.

Louis Helbert, a senior analyst at Progressive Strategies, Inc. in New York, said the delay makes little difference if there isn't a market for Kona.

"Releasing things like this is more a marketing coup than a product," Helbert said. "I don't think it's going to have a big effect on the world." ☐

Senior editor Barb Cole-Gomolski contributed to this story.

Doing IT on ice
Why some go
ANTARCTICA
http://antarctica.computerworld.com
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NC drive continues; users still waiting

By April Jacobs

PLUCKY VENDORS in the young network computer market last week announced hardware and applications software, but many corporate IS managers are waiting for the market to mature.

Officials at Acorn Group PLC in Cambridge, England, said it will introduce a network computer based on Digital Equipment Corp.'s SA110 StrongARM processor, which runs at 233 MHz.

Dubbed the Concord, the minitower machine includes infrared keyboard support, a smart-card interface and embedded support for Java.

But users will have to wait for the hardware. Like other network computers, including Sun Microsystems, Inc.'s JavaStation, the Concord won't be commercially available until OEMs adopt the design.

Features of Acorn Group's Concord

- **233-MHz Digital StrongARM processor**
- **Infrared keyboard support**
- **Smart card interface**

Meanwhile, Oracle Corp. spin-off Network Computer, Inc. in Redwood Shores, Calif., announced it will ship a version of the StarOffice application software suite with its network computer server software (see story, page 61).

StarOffice is similar to Microsoft Corp.'s Office suite. Corel Corp.'s Java-based office suite has been put on hold.

Many IS managers seem interested in network computers and the concept of thin clients, which would let them manage their applications from one or more central servers. But they are adopting a wait-and-see approach to buying them.

Bruce Benham, chief information officer at RE/Max International, Inc. in Englewood, Colo., said he won't consider using network computers now — even though he is interested in them — because the hardware is relatively unproven, and there are too few applications.

"I don't like to implement first versions of anything," Benham said.

Others are looking at network-computerlike environments — converting 286- and 386-based PCs to run new applications at the server level — instead of purchasing new hardware. Ed Sciabba, CIO at Lowell General Hospital in Lowell, Mass., said he hopes to adopt that strategy, preserving his hardware investment and centralizing application management.

Sun's JavaStation hasn't hit the streets, but Sun has announced some major customer wins, such as last week's contract with the New South Wales Roads and Traffic Authority in Australia. The agency next month plans to install 896 JavaStations across the state.

Analysts agreed that vendors are jumping in to the network computer market but said it is a limited niche and will remain so until more off-the-shelf applications are available. A recent study by Zona Research, Inc. in Redwood City, Calif., found that only 15% of the 137 IT buyers surveyed plan to deploy thin-client architectures in the next three years. □

IBM gives 'net boost to OS/2 Warp

By Laura DiDio

IBM LAST WEEK released a new version of its TCP/IP software that provides OS/2 Warp Server users with performance boosts of up to 60% and enhanced security.

IBM TCP/IP Version 4.1 was unveiled at last week's Networld/Interop '97 trade show in Atlanta.

Version 4.1 for the first time can detect conflicts in TCP/IP router addresses that can shut down the router, said John Albee, IBM's OS/2 Warp program manager. That can't happen because TCP/IP 4.1, which automatically detects redundant IP addresses, sends the user a pop-up message and prohibits him from logging on with a duplicate address.

"That sounds wonderful," said Doug Mitchell, an attorney and network administrator at Dickerson, Dickerson, Consul & Pocker, Inc. in Las Vegas.

"I've never actually had a router go down, but I have had conflicts with TCP/IP addressing. In general, I try to keep as much network control as possible. But users are ambitious creatures, and stuff happens. It's nice to know IBM has eliminated many of the causes of those problems in OS/2 Warp 4 with the new TCP/IP stack," Mitchell said.

IBM also included first-time support for Virtual Private Networking and data encryption within TCP/IP 4.1, which protects intranet and extranet data transmissions from would-be hackers.

TOO LATE?

"The options are wonderful, especially the boost in performance. Faster is better," said John Robinson, a systems manager at the South Carolina Department of Parks, Recreation & Tourism in Columbia, S.C.

Even so, none of the new features is compelling enough for Robinson to stick with OS/2 Warp Server.

The agency will migrate to Microsoft Corp.'s Windows NT Server within the next several months.

"I'm one of the biggest OS/2 Warp Server bigots who ever lived, but there just aren't enough applications for the platform. Everything is being written for Windows NT Server. I'm really sad that IBM has been a day late and a dollar short on their desktop and operating system strategies," Robinson said.

IBM TCP/IP 4.1 for OS/2 Warp Server 4 is shipping now. It is available as a free software download from IBM's World Wide Web site (*www.ibm.com*). □

WARP ENHANCEMENTS

TCP/IP Version 4.1 software for OS/2 Warp Server 4:

- **Has a 20% to 60% performance increase**
- **Automatically detects TCP/IP address conflicts**
- **Reuses the last Dynamic Host Configuration Protocol address in the event of a server crash**
- **Includes support for data encryption over virtual private networks**
- **Has a domain name server proxy that automatically links TCP/IP addresses with a host name**
- **Is available now**
- **Costs $499 for a single server license, $249 for a single client**

*Free for users with the Upgrade Protection Option

Market
wisdom

After three decades in IT, **Gordon Clark**, 62, found it tough to crack the youth-oriented Silicon Valley job market. That's until he joined **Senior Staff 2000**, a database designed to match older IS pros with companies in need. Now Clark is among 7,000 programmers and systems analysts who are poised to bring their experience to bear on year 2000 projects.

Corporate Strategies, page 39

SAP adds object orientation to R/3

By Randy Weston

SAP AG's flagship R/3 business software soon may be a little less like concrete and a little bit more like Lego building blocks.

The German software maker, with U.S. headquarters in Wayne, Pa., last week announced the next generation of its programming language — ABAP Objects — which will incorporate object orientation for the first time.

The programming language is meant to make it easier for developers at SAP, third-party software vendors and R/3 user companies to modify R/3. Business rules will be encapsulated in the objects, so programmers can reuse the blocks of code when building new functionality rather than writing code from scratch each time.

That is good news for GATX Capital Corp., a $5 billion asset management and financial services company in San Francisco. GATX will wrap up its R/3 project, which mostly involved tailoring it to the leasing business, in January.

Although most of the difficult custom work is already done, Chief Financial Officer Michael Cromar said the new object-oriented programming language will make it much easier for GATX developers to enhance R/3 functionality.

ABAP Objects will be available with the release of R/3 Version 4.0 next spring. SAP officials said objects written in ABAP Objects code will work with R/3 Version 3.0 or later. □

Retailers slow to check out year 2000

By Thomas Hoffman
PHILADELPHIA

A LOT OF jingling cash registers could turn silent if retailers don't begin accelerating their year 2000 projects.

With less than 15 months left to fix critical merchandising and in-store systems before the recommended yearlong testing phase begins in January 1999, many retailers are only just beginning to act.

Eighty-seven percent of midsize retailers ($300 million to $2 billion in revenue) still have noncompliant retail management systems, according to a new study released by the National Retail Federation at its annual Retail Information Systems Conference held here last week.

Rick Amari said he is less concerned about the time constraints than he is about securing enough staff to fix The Limited, Inc.'s systems and getting the company's business units to buy in to the project.

Sears CIO Joseph A Smialowski

Retailers "have got to decide where to place people [they] have and where to outsource – it's a matter of survival"

Amari, vice president of merchandise systems at the Columbus, Ohio-based apparel retailer, said his group has just started to identify year 2000 problems with its systems and plans to replace its legacy merchandise system with Comshare, Inc.'s Arthur system.

"We'll make [the year 2000 deadline]," Amari said. "If we don't, you'll be talking to someone else."

The industry's delay in reacting to the problem is complicated because retailers typically work off of thin profit margins. As a result, IS departments generally are "the last place that money goes into," said Amin Shahidi, a principal at Kurt Salmon Associates, a retail consultancy in Los Angeles. And the cost to fix the year 2000 problem already is eating into data warehousing and other strategic projects, he said.

Retailers also will have to improve upon their poor track record of allocating information technology staffers effectively to critical projects, said Shahidi and several chief information officers at the conference. Retailers "have got to decide where to place the people [they] have and where to outsource other functions — it's a matter of survival," said Joseph A. Smialowski, senior vice president and CIO at Sears, Roebuck & Co. in Hoffman Estates, Ill.

NOT RESPONSIBLE

Also at issue is the ripple effect that noncompliant suppliers might have on the retail supply chain. Some larger retailers, such as Sears, are working with their suppliers to ensure that they reach compliance in time. Others, such as Toys R Us, Inc. in Paramus, N.J., have decided they "can't be responsible for what all suppliers are doing" to make their systems year 2000-compliant, said Tom Reinebach, senior vice president and CIO at the toy retailer.

Because the date change arrives after the hectic holiday shopping season of 1999, Toys R Us should be able to work around any systems snafus that might occur if a single supplier goes down, Reinebach said.

To help with the supply-chain problem, the National Retail Federation is working with a handful of electronic data interchange (EDI) vendors and value-added networks to fix EDI transaction "sets" for invoices, purchase orders and acknowledgments, said Cathy Hotka, vice president of IT at the Washington-based trade association.

Hotka said the group hopes to ship a set of "vanilla" transactions for value-added networks to test with their clients by January. □

RS/6000 gains 64-bit power

By Tim Ouellette

IBM'S RS/6000 and AS/400 divisions are sharing chip manufacturing operations as a way to lower costs and speed processor upgrades in the highly competitive high-end Unix server market.

As a result, IBM next month will begin shipping a new RS/6000 server, the S70, that runs the 64-bit PowerPC Apache chip, the same chip found in IBM's newest AS/400E midrange systems.

And IBM said it expects to double the performance of the S70 sometime next year with an upgraded Apache chip.

But the newfound cooperation between the AS/400 and the RS/6000 may not be enough to dramatically boost IBM's Unix sales or clear up the confusing marketing messages users get from the competing divisions.

The best thing would be for IBM to clearly define the target users for its various servers, said Tom Bittman, an analyst at Gartner Group, Inc. in Stamford, Conn. (see chart).

That would simplify users' buying decisions for products such as the S70 and the AS/400. But such a move is hard for IBM, Bittman said.

"While the mind is willing among the IBM leadership, the body is still a bunch of divisions," he said.

On the plus side, John Young, an analyst at The Clipper Group, Inc in Wellesley, Mass., said, "The internal efficiency [of coproducing the Apache chip] will let IBM keep the RS/6000 price-competitive with anyone else in the Unix marketplace."

The S70 packs more punch than any of the high-end R series RS/6000s that came before it, with prices starting at $125,000 for its four-, eight- and 12-way systems. It also will ship bundled with IBM's 64-bit AIX 4.3 Unix operating system.

Although 64-bit systems can show some improvement in the performance of existing 32-bit applications, analysts said 64-bit offerings aren't yet deal breakers at most shops. That is actually good news for IBM, which has trailed other Unix vendors, including Digital Equipment Corp., Sun Microsystems, Inc. and Hewlett-Packard Co., in 64-bit Unix offerings.

Still, users said there is comfort in knowing that 64-bit systems bought today will support the high-octane needs of the future.

"We are in the process of a very large data warehouse project, and its size and usage will require a very high performance environment," said Mark Davydov, director of new technology at Edison Brothers Stores, Inc. in St. Louis. He has an S70 on order. □

STRONG SUIT

Even with the RS/6000 and AS/400 sharing a processor, analysts say their use an application server is best divided as follows:

	Deployment	Concurrent users	IS resources available
Windows NT	Small division	Less than 200	Many
AS/400	Small enterprise division	Less than 750	Few
RS/6000	Enterprise division	50 to 750	Many

Source: Gartner Group, Inc., Stamford, Conn.

Packaged tools ease users into data warehousing

▸ *Analytical tools embedded in databases*

By Randy Weston

CLIENT/SERVER application software vendors are embedding prepackaged data warehouses and analytical tools in their software suites, which is helping skittish customers ease into the world of data warehousing.

"A lot of companies aren't even looking at [data warehousing] technology because they are afraid of the complexity and cost," said Henry Morris, an analyst at International Data Corp. (IDC) in Framingham, Mass. "But the idea of a packaged data warehouse is appealing to people," he said, citing a recent IDC survey.

I2 Technologies, Inc. is the latest application vendor to join the bandwagon. The Irving, Texas-based maker of supply-chain management and forecasting software announced last week it will embed Arbor Software Corp.'s Essbase online analytical processing (OLAP) engine in its product line.

I2 joins application vendors SAP AG, Oracle Corp. and PeopleSoft, Inc. in making OLAP tools and data warehousing a standard option in its products.

Rockford Corp., a $100 million Tempe, Ariz.-based maker of audio components such as speakers and headsets, uses Oracle Applications Data Warehouse with the full suite of Oracle applications.

INTEGRATION ADVANTAGE

David Richards, vice president of information technology at Rockford, said getting data warehousing capability from application vendors makes sense because most of a user company's data resides in the large packaged applications.

"You gain the advantage of integration with your applications," he said.

Richards said the Oracle package gave his company a lot of data warehousing functionality that otherwise would have been too costly or too time-consuming to create.

Don Zimmer, database administrator at publishing firm Harcourt Brace & Co. in Orlando, Fla., said packaged analysis tools are a perfect way to introduce users to the power of data analysis while companies plan larger data warehousing projects.

Building a data warehouse from scratch can cost $1 million or more and take 18 to 36 months.

But the prepackaged data warehouses that come with application packages are less expensive and come with analytical tools at no extra charge. □

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Users clamor for inexpensive high-speed WAN connections

By Bob Wallace

SOME LARGE USERS said cost and capacity have made wide-area networks a major impediment to the deployment of applications and technologies that can improve how they do business.

Local networks run at speeds as high as 1G bit/sec. Frame relay and other WAN services are slower and typically run at 56K bit/sec. or 1.544M bit/sec. That creates a bottleneck that strangles high-bandwidth applications that run fine locally.

HIGH COSTS

Carriers do offer one or two high-speed services, but they are exorbitantly expensive. Many users aren't willing to spend more or learn a new technology, such as Asynchronous Transfer Mode (ATM).

"We'd like to run WAN services such as frame relay at LAN speeds," said Joseph Farrelly, executive vice president and chief information officer at snack food giant Nabisco, Inc. in Parsippany, N.J. "We'd like to run 128K-bit frame-relay links at 16M bit while getting the costs of WANs down."

That would let Farrelly extend new object-oriented applications across the company's network.

There are affordable WAN services such as frame relay, which cost a few hundred dollars per month but offer a small fraction of the bandwidth of the lowest speed (10M bit/sec.) Ethernet LAN. A 1.544M bit/sec. T1 private line costs several thousand dollars per month but only provides one-tenth of a 10M bit/sec. Ethernet LAN — the slowest LAN.

Faster 45M bit/sec. T3 private lines cost $47,000 per month and still provide less than half the bandwidth of a premium 100M-bit/sec. Fast Ethernet LAN.

ABOUT ATM

ATM connections, which run at 155M bit/sec., exceed Fast Ethernet LANs but cost far more than T3. And ATM has only one-sixth the bandwidth of leading-edge 1G bit/sec. Gigabit Ethernet networks.

"The network is keeping us back from developing technology we'd like," Farrelly said. He cited digital cellular services as one example.

Carriers said a solution is available if users can bear the cost.

"We have service like 155M-bit ATM that they could use to connect high-speed campuses, but the question is, do they want to pay for it?" said Ray Kang, director of broadband marketing at MCI Communications Corp. in Reston, Va. When asked if prices on such services would come down, Kang said it was unlikely because they are expensive to provide.

"I expect a group of little-known carriers to eventually provide services that link campuses at the same speed on the WAN as they're running on the LAN. That will wake up the big players," said Mike Zboray, an analyst at Gartner Group, Inc. in Stamford, Conn.

The services those users seek are called transparent LAN services and are available from a few telephone companies in limited geographic regions.

But many large users want those better services now.

"The more bandwidth carriers can give us, the faster we can implement video and voice over IP in our corporate WANs," said Timothy Regan, advanced information development manager at Federal Express Corp. in Memphis.

"We'd like to archive videos of people talking on different topics and provide access to them from anywhere on the WAN," he said. □

WAN FORECAST

- Charges will remain the largest nonpersonnel IT budget item
- Usage will rise between 300% and 600% in North America over the next five years
- Prices will fall 25% to 30% in the U.S. and 40% in Europe over the next five years

Source: Gartner Group, Inc., Stamford, Conn.

& Polaroid uses nets to support demanding users, customers and suppliers. Page 55

Suite approach misses the point

▸ *Gartner warns of 75% failure rate for enterprise management projects*

By Patrick Dryden

GRAND-ENTERPRISE management projects can be more boondoggle than a boon, warned analysts speaking at Gartner Group, Inc.'s ITxpo 97 conference last week in Orlando, Fla..

Integrating the management of systems, networks and applications through a central tool kit can cost 10 times the price of the software.

Such software is typically Unicenter from Computer Associates International, Inc. in Islandia, N.Y., or the Tivoli Management Environment (TME 10) from Tivoli Systems, Inc. in Austin, Texas.

Fees exceeding $10 million are common for corporate licensees.

PROJECT FAILURE

Three-fourths of these projects fail in the first 18 months of rollout, doomed by rising cost, blurry goals, a shortage of expertise and lack of progress, according to Ray Paquet, an analyst at Gartner in Stamford, Conn.

"Buying an [all-in-one] enterprise manager is in vogue right now, but it's harder to implement one and see results than to apply individual best-of-breed tools that solve specific problems," Paquet said.

"Think tactically," he advised.

Information systems managers agreed that the cost of staff training, consulting services and tool implementation is high.

But the struggle is worth it, they said. Integrated management pays off in improved efficiency — if you don't get overwhelmed on the way.

American International Underwriters' Mike Altiero: "You'll get discouraged if you take on too much"

"We've already reduced total downtime 24% so far this year," said Larry Dial, a senior systems integrator at Barnett Banks, Inc. in Jacksonville, Fla.

Through Tivoli's TME 10 framework, the bank's IS operators can detect problems with systems and networks quicker, respond automatically and share a single documentation resource, Dial said.

But getting this far required leaping more political obstacles than technological hurdles, he said.

"Most IS organizations are built of groups focused on particular components, so they can't understand that their real job is to satisfy business needs," Dial explained.

That means they must view the failure of a router or server in terms of the impact on loan processing, for example.

BOGGED DOWN

Trying to solve too many problems at once also can bog down an enterprise management project, users said.

"I made the mistake of wanting to do it all and lost focus," said Mike Altiero, network services manager at American International Underwriters in Livingston, N.J.

A few weeks into the rollout of CA's Unicenter TNG, Altiero realized he had to take a point-product approach to implementing the suite. "Success or failure depends on your planning," he said.

Vendors and some users said they couldn't believe Gartner's research revealed such a high failure rate.

"I can't grasp anyone just walking away entirely from a big dollar investment in enterprise management," said James Brown, senior vice president of network operations at NationsBank Corp. in Charlotte, N.C.

Brown said he expects the banking system will embark on its rollout of TME 10 as "a journey that may take a long time."

Echoing Altiero, he said experience with big projects warns him to take the tactical approach of delivering tangible success for the business early on — and step by step.

At Blue Cross/Blue Shield of North Carolina, a steering committee must constantly review goals and progress of its TME 10 rollout to prevent "scope creep," in which managers and users seek to take advantage of additional functions, said Harry Reynolds, IS vice president in Durham, N.C.

"None of this is easy, yet we're tempted to do too much," Reynolds said. "You have to stay focused or you're going to burn." □

Victory is still possible

Most enterprise management projects are doomed, according to Gartner Group research. But users offered these implementation caveats:

- **Shift from technology to business focus: Which user applications suffer when one piece acts up?**
- **Break down walls between specialists: It isn't your problem, it's our problem.**
- **Plan strategically: Map out exactly what to accomplish.**
- **Implement tactically: Apply one tool at a time to avoid being overwhelmed.**
- **Keep deadlines short: Deliver tangible benefit at each step for morale, buy-in.**
- **Involve field engineers: Show how centralized tools can help remote support staff. — Patrick Dryden**

& Platinum Technology's management tools start to work together – finally. Page 55

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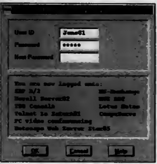

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FRANKLY SPEAKING

Sun shrugs off Java threats

FRANK HAYES

GLOOM AND DOOM, death and destruction! That sound you hear is the wailing and the gnashing of teeth as Sun and Microsoft edge closer to a legal clash of titans that will demolish Java, cripple intranets and set the World Wide Web back 10 years.

Sun says Microsoft violated its Java license. Microsoft refuses to add the Java interfaces and libraries Sun demands. Java is doomed, intranets and the Web will collapse into confusion. . . .

Oh, the humanity!

What's that? You don't hear any wailing or teeth-gnashing among your users or Java developers or network managers or webmasters?

OK, so it's mostly analysts and pundits and reporters doing the doomsaying.

But they must know what they're talking about, right? After all, Microsoft is desperate to derail Java, and Sun will do anything to protect the technology that has made it a household name. All the harsh words and threats that have been slung mean they're on a collision course for sure — don't they?

Until Sun's lawsuit last week, most of the harsh words and threats have come from one corner. It was Microsoft that first threatened to sue Sun over changes in Java, way back in February.

McNealy looked more worried about his next golf game than a fight with Microsoft.

It's Microsoft that's been insisting cross-platform Java is impossible, that Java is nothing more than a nice object-oriented language

It's Microsoft's Cornelius Willis who describes Java developers as "hanging on a limb. There will be lots more disappointed [Java developers] as they realize how bad it's going to get."

Pretty grim, eh?

And how seriously do they take all this at Sun? Ask Sun's hard-driving, hockey-playing, hypercompetitive CEO Scott McNealy. As recently as a couple weeks ago, you got ... a shrug.

As long as Microsoft's Java runs 100% Pure Java applets, he said, Sun, Netscape and other vendors can always provide the necessary libraries, Java Beans and other technology users need. (And Microsoft managers insist that, yes, Microsoft Java *will* run those 100% Pure Java applets.)

That's it. No gloom and doom. No death and destruction. This is a man who looked more worried about his next golf game than about a forthcoming fight with Microsoft. And he was right. Because for Sun, the fight was fought and won long ago. Sun owns Java. Users love Java. And for once, users have been telling Microsoft what to do instead of the other way around.

How? Competition. Netscape owned the Web browser market when Microsoft finally discovered the 'net. To compete, Microsoft actually had to — well, *compete* and give customers what they wanted, not what was convenient for Microsoft.

Users forced Microsoft to adopt Java and JavaScript, conform to standards, support platforms such as Windows 3.1 that it would rather abandon and pour resources into building a better browser, better E-mail and a better Java. Then users forced Microsoft to give it away free, all in the name of competition.

No wonder Microsoft feels gloomy and doomy: For the world's biggest independent software vendor, it's the tortures of the damned with no end in sight.

For users? Sorry, no death and destruction — it's more like Disneyland. That same competition means ever-improving technology at rock-bottom prices. Despite Microsoft's misery and Sun's suit, that's a pretty cheery prognosis.

Don't worry about us doomsayers, though: there's still plenty to sink our teeth into. The year 2000. Crazed hackers. IRS source-code auditors. Even — dare I say it — those clowns in Marketing who are running their own Web server again. ...

Oh, the humanity! ☐

Hayes is Computerworld*'s staff columnist. His Internet address is frank_hayes@cw.com.*

SHORTS

Jobs may take the job after all

Apple's Steve Jobs

Steve Jobs, acting CEO at Apple Computer, Inc., told attendees at the Macromedia User Conference in San Francisco that he would seriously consider dropping his "interim" designation. An Apple spokeswoman said Jobs' remark was simply a step in his decision-making process, not the final word. "He has not made any announcements, we have not made any announcements, and his status has not changed," said Apple's Katie Cotton. Apple has been searching since July for a CEO to replace Gilbert F. Amelio.

Court: McAfee can't use code

A U.S. District Court judge issued an injunction that bars McAfee Associates, Inc. in Santa Clara, Calif., from shipping antivirus software that contains code copied from Symantec Corp. in Cupertino, Calif. Under the ruling, McAfee also must use distributors to notify customers who purchased the affected versions of PC Medic that they should upgrade. McAfee officials said the order doesn't prevent sales of current PC Medic and VirusScan versions.

Tariffs hit supercomputers

The U.S. International Trade Commission slapped Japanese supercomputer makers with huge tariffs that effectively bar them from selling machines in the U.S. market. The decision came in the wake of a dumping claim filed by Cray Research, Inc. in Eagan, Minn., that contends Japanese vendors were selling supercomputers below fair market value [CW, Sept. 1]. NEC Corp., the primary vendor named in Cray's claim, said it will "seek other means of providing U.S. users with access to NEC supercomputers."

FCC turnover delays rulings

The Federal Communications Commission will delay rulings on Jackson, Miss.-based WorldCom, Inc.'s $30 billion bid for MCI Communications Corp., said outgoing Chairman Reed Hundt. Because four of five commissioners are leaving, Hundt said, the WorldCom bid should go before the FCC after the Senate acts on the commission nominees. British Telecommunications PLC, which earlier made a bid for MCI and wants to comment on the rival proposal, also won a delay on the WorldCom hearing.

AT&T seeks outsourcer

AT&T Corp. in Basking Ridge, N.J., issued a request for proposal to four outsourcing vendors to handle its customer support and billing systems. The requests — which were sent to IBM, Electronic Data Systems Corp., Computer Sciences Corp. and Andersen Consulting — cover approximately 200 billing, sales and other applications representing $230 million in annual expenses. Meanwhile, AT&T plans to offer business accounts a new Internet backbone access service with access guarantees.

Oracle revises profits report

Oracle Corp. officials said the net income reported last month for its fiscal first quarter is being reduced to get more favorable tax treatment for a recent acquisition of software vendor Treasury Services Corp. in Santa Monica, Calif. The restatement will decrease Oracle's income for the quarter ended Aug. 31 to $8.5 million, down from the $40.5 million the Redwood Shores, Calif., company originally reported.

WorldCom in Europe net deal

Alacatel Alsthom S.A. in Paris last week announced it will build a high-speed fiber-optic network in Europe for Jackson, Miss.-based WorldCom. The network will link London, Amsterdam, Frankfurt, Brussels and Paris.

EC opposes crypto restrictions

The European Commission, which proposes legislation to the European Union Parliament, has come out against restricting the use of software encryption, a stance that contradicts U.S. policies. The commission last week said regulating encryption probably wouldn't stop criminals from using it because of easy access to cryptography software on the Internet. "Restricting the use of encryption could well prevent law-abiding companies and citizens from protecting themselves against criminal attacks," the commission said.

SHORT TAKES AT&T is rumored to be discussing a merger with GTE Corp., although neither company would comment. ... MCI said it will offer users use-as-needed connections at speeds up to 6M bit/sec. with its HyperStream Frame Relay Service starting in December. ... The U.S. Treasury Department is planning to pay bills using an experimental Internet system developed by the Chicago-based Financial Services Technology Consortium, a group of banks. ... The National Information Assurance Partnership, a group of federal agencies, plans a testing program for computer security products that uses private laboratories to perform some of the tests.

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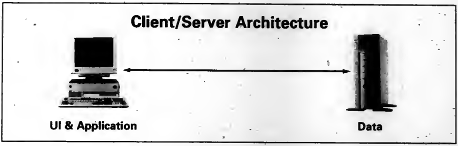

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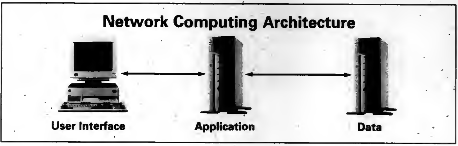

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Utility eyes Internet access over power lines

By Thomas Hoffman

NORTEL, INC. and a British utility have developed what could be a breakthrough technology that provides consumers with high-speed Internet access over power lines.

The system, which separates data signals from electricity, was designed to deliver data traffic at 1M bit/sec., nearly 10 times faster than an Integrated Services Digital Network (ISDN) line.

Customers would need to install a small box next to their electric meter to send and receive data. The technology doesn't transmit voice or video.

The box would be linked to a PC with a standard coaxial cable The hardware would cost $300 — about as much as an ISDN card — and service costs would be up to individual utilities.

Nortel jointly sponsored a trial at 20 households with United Utilities PLC in London. Officials at the utility said their year-long trial was successful.

Although the technology could be a boon for utilities eager to leap into the Internet service provider market, industry observers said similar attempts have failed in the past.

"This has been tried before, and I don't think it has gone anywhere," said Tina Barber, chief information officer at Brooklyn Union Gas, a natural gas utility in Brooklyn, N.Y., which is planning to merge with Long Island Lighting Co. in Hicksville, N.Y.

Barber referred to a similar 1995 effort by Novell, Inc. and UtiliCorp United.

Although the technology could be a boon for utilities eager to leap into the Internet service provider market, industry observers said similar attempts have failed in the past.

That project failed to yield any substantial results, leading UtiliCorp to terminate its partnership with Novell and file a lawsuit against the Provo, Utah-based networking vendor for "failing to live up to the terms of the agreement," said a spokesman at the Kansas City, Mo.-based utility. The lawsuit was filed in a Kansas City circuit court last month.

Despite its fallout with Novell, UtiliCorp hasn't soured on the potential for power-line Internet connections. If the United Utilities/Nortel venture meets expectations, "we'll be real interested," the spokesman said.

EUROPE FIRST

UtiliCorp may have to wait a while. The current technology has been designed to work across the power grid in the U.K., where there is one transformer for every 100 to 300 customers. In contrast, the North American power grid sports one transformer for every eight to 12 customers, leading the developers to focus on the European market first because deployment of the technology is more cost-effective there, a Nortel spokeswoman said.

Nortel in Brampton, Ontario, is still evaluating deployment in North America, although it hasn't yet set a timetable, the spokeswoman said.

Several U.S. utilities have plotted different paths to expand their offerings. One is Entergy Corp. in New Orleans. Last February, it formed a joint venture with Hyperion Telecommunications, Inc. in Coudersport, Pa., to offer competitive telephone services to commercial customers in Little Rock, Ark., Jackson, Miss., and Baton Rouge, La., using fiber-optic cable. □

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User craze for handhelds gives IS a headache

Excess baggage?

The handheld arena is hopping this month, with IBM embracing the PalmPilot, Hewlett-Packard adding management features to its refreshed palmtops and Microsoft Corp. boosting its Windows CE operating system.

But handhelds may be a tough sell to corporate America. While vendors scramble to offer these new gadgets, some users shun the idea of carrying yet another piece of equipment.

"I carry a beeper, a cell phone and a laptop," said Mike Caretto, a regional IS manager at PacifiCare Health Systems. As for the handheld? "I just haven't found it that useful."

Nonetheless, vendors are forging ahead, plugging new capabilities into devices they are pushing from the consumer market into corporate ranks.

Recent announcements include the following:

- **IBM's agreement to sell 3Com's popular PalmPilot under a new name, WorkPad. WorkPad weighs 6 oz., has 1M byte of storage and costs $399. With the IBM brand name, analysts said they expect corporations to quickly snatch up WorkPad, particularly if the devices are marketed as a partner to the company's laptops.**

- **HP's addition of management software, called TopTools, to its 320LX palmtop computers, which run Windows CE. The software gives IS more control over the device when it is used on the network. But analysts said the devices often are used off-line and render such software ineffective.**

- **The recently announced Windows CE 2.0. The operating system upgrade includes Pocket PowerPoint and support for E-mail attachments and Ethernet. HP and other vendors are expected to roll out Windows CE devices at Comdex/Fall '97. Those machines will feature color screens and a larger form factor, among other attractions.**

— Kim Girard

By Kim Girard and
Gordon Mah Ung

NELLIS FREEMAN, MIS director at Fenwick & West LLP, is watching the escalating invasion of handheld gadgets into the Palo Alto, Calif.-based law firm with a wary eye.

"They're coming out my ears," Freeman said. The devices are helpful to lawyers, he said, but they mean extra work for the information systems staff. According to company policy, IS must install necessary synchronization software on PCs so users can download data to a personal digital assistant (PDA) from their desktops.

Calls for help come daily from people in the field who are having trouble reading electronic mail on a 3Com Corp. PalmPilot or who complain that they have run out of system memory, Freeman said. "It's a lot of work," he added.

IS GETS INUNDATED

IS managers said hard-core mobile warriors are all too eager to try new handhelds and, for the most part, are buying them for personal use. But as network connectivity becomes a crucial component of daily handheld use, the burden is falling on IS to manage or limit use of the devices — typically PDAs or larger Windows CE machines that are synchronized with the desktop.

"I'm always inundated," said Kathy Weeks, director of information delivery systems at PacifiCare Health Systems, Inc. in Santa Ana, Calif. Weeks carries a laptop, a pager and a PalmPilot and has three cellular telephones. Like many users, Weeks said she wants one device that can do everything.

Windows CE devices typically weigh about 13 oz., are clamshell-shaped, sport a keyboard and were designed for E-mail and running slimmed-down versions of Excel and Word. Simpler PDAs — such as 3Com's 6-oz. PalmPilot — are intended to store calendars, to-do lists and addresses and can be used for note-taking.

Handhelds typically cost between $500 and $700, compared with $400 and less for the smaller PDAs that synchronize information with a desktop PC using software such as Puma Technologies, Inc.'s IntelliSync.

"IS is not ready to support and manage these devices yet," said Ken Dulaney, an analyst at Gartner Group, Inc. in Stamford, Conn.

"The potential is there to have a big impact" on IS, agreed Nathan Nuttall, an analyst at Sherwood Research in Wellesley, Mass. "Now IS is burdened with yet another problem."

LIMIT SETTING

Corporations with burgeoning ranks of palmtop owners can nip problems in the bud by setting policies that clearly define which devices the company won't support, Nuttall said.

"If there were a couple hundred [handhelds] around, technical support would be an issue," said Jon Koerber, director of Internet development at American Fidelity Assurance Co. He said the insurance company is considering replacing laptops with Apple Computer, Inc.'s Newton, a powerful PDA with a 166-MHz processor that the company could use to connect to the Internet.

The Newton's popularity has dwindled, but the PalmPilot's popularity has grown. That has prompted IBM to push into corporations with its new WorkPad, which will be built by 3Com and is expected to provide access to Lotus Notes groupware (see story at left).

Other companies, such as Hewlett-Packard Co. and Philips Mobile Computing Group, are expected to offer color screens and larger keyboards on machines that run Windows CE 2.0.

Rob Enderle, an analyst at Cambridge, Mass.-based Giga Information Group, said users are searching for one "elegant" yet small device that combines multiple functions, such as pager, PDA and phone.

"Right now, it's multiple things they've got to hang off their belt," he said. Although the new Nokia 9000 — a combined telephone/minicomputer — is a start, it doesn't easily fit in a pocket, he said.

But some companies aren't convinced of the handheld's value at all.

"That will change when capability of the palmtop reaches where the laptop is today," said Ernest Andalcio, director of worldwide medical affairs systems at Bristol Meyers Squibb in Princeton, N.J. "People love the convenience of the palmtop, but capability is such a letdown from the laptop." □

Mininotebooks hit the fall runway

By Kim Girard

BUOYED BY THE popularity of Toshiba Corp.'s tiny Libretto notebook PC, competing vendors are expected to roll out more powerful mininotebooks this fall.

Mitsubishi Corp. is selling a 2.4-lb. mininotebook, Amity CN, which has a 133-MHz Pentium processor, 16M bytes of memory and a 1.2G-byte hard drive. Hitachi Ltd is expected next month to announce a similar, 2.7-lb. mininotebook.

Toshiba, not standing still, plans to unveil at Comdex/Fall '97 an upgraded Libretto with more memory and power than its Libretto 50CT. The Libretto 50CT costs about $2,000 — the same price as the Amity — and has a 75-MHz processor and 16M bytes of memory.

Compaq Computer Corp. may announce its own mininotebook as well, analysts said.

Weighing in at about 2 to 3 lb., mininotebooks are positioned between laptop PCs and Windows CE handheld devices. Laptops weigh from 5 to 7 lb. Windows CE devices weigh about 13 oz. Mininotebooks typically run Windows 95, have a color screen and sport a more powerful processor than Windows CE machines.

"People are tired of lugging around the 7-lb. or 8-lb. notebook,"
– Stanley Dubrowski,
Bergen County Utilities

Although their larger keyboards and color screens make them more appealing than Windows CE devices, Phillip Redman, an analyst at The Yankee Group in Boston, said mininotebooks are too expensive to draw a large user base.

"It's kind of a niche right now," Redman said. "For prices of $2,000, it's difficult to reach the market. The majority of the market will still get a full-size notebook."

Stanley Dobrowski, data center manager at Bergen County Utilities Authority in Little Ferry, N.J., said the mininotebook is becoming a viable laptop alternative now that high-capacity hard drives are on the way.

"People are tired of lugging around the 7-lb. or 8-lb. notebook," Dobrowski said. "That's where the appeal of the Libretto comes from." □

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DATA ANALYSIS TOOLS

NCR broadens data warehouse offerings

By Jaikumar Vijayan

NCR CORP. last week said it will bundle SAS Institute, Inc.'s data analysis tools with its data warehouse platforms.

Such bundling is aimed at easing integration and implementation hassles for users who are building decision-support systems.

Under an alliance between the two companies, Dayton, Ohio-based NCR will bundle and resell SAS Institute's data warehouse software, including extraction and transformation tools.

Meanwhile, NCR last week introduced two servers to its WorldMark line of scalable servers. The WorldMark 4700 targets the small data marts market. And the WorldMark 5150 will replace the 5100 model as the highest-end database server for the company (see chart).

TIME-SAVER

"The SAS alliance basically gives users one-stop shopping" for data mining and decision-support tools, said Brian Murphy, an analyst at The Yankee Group, a consultancy in Boston. "It is going to cut some of the systems integration and implementation time" for customers, he said.

And the hardware additions give users more processing headroom for application growth at the low. and high ends.

"The 5150 provides the migration path beyond my existing architecture," said Mark Frazier, staff manager of financial systems at Lucent Technologies, Inc. in Basking Ridge, N.J.

And because the server offers backward compatibility, "it will allow me to expand without having to revamp my existing platform," Frazier said.

The telephone equipment manufacturer currently uses NCR's WorldMark 5100 platform to run a financial data warehouse.

Pricing for the WorldMark 4700 starts at $158,000, and pricing for the high-end WorldMark 5150 starts at about $500,000.

NCR's latest moves — particularly its alliance with SAS and its new low-end server — are part of the vendor's attempts to broaden the appeal of its data warehouse offerings.

For example, NCR has rolled back prices on Teradata by more than half in the past 12 months, and the company is working with Microsoft Corp. to port Teradata to Windows NT. □

WORLDMARK LINE

WorldMark 4700

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- Up to 8 nodes can be clustered, supporting up to 600G bytes of data

WorldMark 5150

- Scalable up to 128 connected nodes
- Can support from 600G bytes of data to more than 100T bytes

U.S. unprepared for cyberterrorism

By Sharon Machlis
BALTIMORE

AS NATIONAL SECURITY threats move from weapons of mass destruction to those of "mass disruption," the private sector must work with government to protect the U.S. from cyberterrorism, s presidential commission concluded.

"The potential for disaster is real," said Robert Marsh, chairman of the President's Commission on Critical Infrastructure Protection, at a government security conference here last week. "Neither government nor industry is prepared to deal with these threats."

In a report slated for release this week, the commission outlined several suggested actions, including one that corporate America has long been loath to do: share information about computer security breaches.

The commission called on government to help create information exchange centers by industry sector, where reports about hacking attacks can be collected. Details about the victim company would be removed before summaries were disseminated. Nevertheless, many companies don't want news to leak out that their computers were found vulnerable, fearing bad publicity and a consumer backlash.

SHARON MACHLIS

"The potential for disaster is real," says commission Chairman Robert Marsh

And few companies want to spend money or information technology resources on more security unless they have been hit by a serious attack, said Robert Godin, an information security officer at the National Association of Securities Dealers in Trumbull, Conn.

LEGISLATION NEEDED

"[Most companies'] management feels, 'It doesn't pertain to us; we're protected,'" Godin said. Without federal legislation, he said, he doubts that the report will lead to much private-sector action.

But John Kinkel, senior security engineer at the TRW Command Support Division in Fairfax, Va., said the report is "much stronger and comprehensive than I had anticipated." There has been more serious work this year on security at a federal agency he contracts with than in prior years, Kinkel said, in part because of the commission's yearlong work of meeting with government and industry officials.

The report also recommended the following:

- Federal research into computer security should be doubled to $500 million next year and increased 20% per year several years after. "Market demand is insufficient" to spur development of needed real-time detection and response tools, Marsh said.
- All federal offices should comply with "best practice" security standards to be set by the National Institute of Standards and Technology and the National Security Agency.
- A national infrastructure advisory council composed of CEOs at companies such as banks and utilities should meet regularly with U.S. cabinet officers.
- A curriculum should be developed from grade to graduate schools that teaches the importance of information security. □

Software stops hackers

CONTINUED FROM COVER 1

By inserting false information into a domain name database, hackers can divert World Wide Web surfers from legitimate sites to their pseudo sites, where the hackers collect credit-card numbers by posing as a store, for example. That is the cyberspace equivalent of hijacking the main telephone number for an airline or catalog company and getting credit-card information from unsuspecting consumers trying to buy goods.

"This is excellent news," said Chris Byrnes, an analyst at Meta Group, Inc. in Stamford, Conn. "It's been very, very clear that the [infrastructure] needed improved security."

Proponents of the software also hope it eventually will boost electronic-mail integrity by allowing new E-mail software that can demand that incoming addresses be properly verified before a message is accepted. That could cut down on messages that pose as coming from a legitimate address and block junk messages with unverifiable return addresses.

"It stops most spoofing attacks," said Carl Malamud, chairman of the Internet Software Consortium, a volunteer organization that disseminates free versions of important Internet implementation software. "It has the potential to prevent all IP address and domain name spoofing. It doesn't handle the most severe problem: people using simple, clear-text passwords, which allows somebody to take over their account."

To effectively impact the Internet, DNSsafe needs to be adopted by top-level domain authorities such as InterNIC, an organization that controls .com addresses, among others, and its international counterparts. Officials at Network Solutions, Inc. in Herndon, Va., which oversees InterNIC, were unavailable for comment on the software.

But Malamud said InterNIC and similar organizations around the world have shown "great interest, and we expect them all to sign up. This is a complicated issue, and they need to study what this means for their operations."

> **"It's been very, very clear that the [infrastructure] needed improved security."**
>
> **– Chris Byrnes, Meta Group**

DNSsafe wss designed for use with DNSSEC, the Domain Name System Security Extensions protocol proposed in January by the Internet Engineering Task Force, an international group that sets network standards. Now, the Internet Software Consortium plans to use the new software from RSA to implement the DNSSEC protocol within the domain name system (DNS).

The Internet Software Consortium expects a beta version of Berkeley Internet Name Domain (BIND), its implementation of the DNS, with the new security feature by the end of the year. □

DNSSAFE SOFTWARE

- Donated by RSA Data Security to the Internet Software Consortium
- Uses RSA digital certificate technology to authenticate domain names
- Aimed at preventing spoofing and some spam
- Will be incorporated in the BIND domain-name server (DNS) implementation by the end of the year
- Available to other DNS developers

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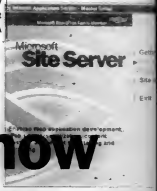
SQL
Proxy
Systems Management
SNA



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Suit puts users on standby

CONTINUED FROM COVER 1

systems at the Applied Physics Laboratory of Johns Hopkins University in Laurel, Md., said if Microsoft is out of compliance with its Java license, it needs to get back in line. Lasky said Java — a pure Java — is key to her lab's future plans, and she doesn't want a vendor battle to wreak havoc with her business.

"No one has to win except the end users, and we're the ones with the most to lose. It delays development," said Dean Johnson, a senior technical specialist at Freudenberg-NOK General Partnership, a $600 million auto parts maker in Bristol, N.H.

There was also concern that Microsoft deviations from the standard would stop Java's momentum — which, in fact, is what analysts and Sun said is the software giant's objective.

"[Internet Explorer 4.0] is going to be a major player for Internet users, so not being compatible with Java could potentially derail Java," said George Xu, a project leader at Brampton, Ontario-based Nortel Canada Ltd. "If Java is going to die, we need to find another tool to replace it. It will be difficult to estimate the loss."

"Microsoft will get what it wants . . . no matter what the consequences are for the little guy." – Christopher Crocker, Restaurant Consulting Services

"If Microsoft is going to take parts of Java and not utilize it in the way it was originally designed, then that's a subset of Java — it's Microsoft Java — and that adds a layer of incompatibility to the picture, which I think will affect any end user," said Christopher Crocker, senior network engineer at Danvers, Mass.-based Restaurant Consulting Services, Inc., an independent outsourcing arm of Daka International, Inc. "[And that means] this affects me because it's now difficult to say that something is completely cross-platform if it's [written in] Java."

Despite a consensus that Microsoft shouldn't tamper with the Java standard, few users said they expected that to happen. "My intuition is that Microsoft will get what it wants, and it will get things done its way no matter what the consequences are for the little guy," Crocker said.

Paul Soares, vice president and general manager at the Alden Buick Pontiac dealership in Fairhaven, Mass., is part of a General Motors Corp. committee that recommends products for and oversees the Windows NT intercommunications network among GM and its 8,500 dealerships nationwide. "In these turf wars, it's always the users who get hurt the worst. We've already piloted [Internet Explorer] 4.0 for our GM Access dealership network. But this lawsuit could put our plans to roll out Internet Explorer 4.0 on hold until the dispute is resolved," he said.

At last week's Gartner Group, Inc. ITxpo '97 in Orlando, Fla., where executives from the warring companies aired their views, Gartner analyst Scott Winkler told users not to "get caught up in that uncertainty."

He said he doesn't see an end to this war in the near future and cautioned that users had better figure out what they are going to do. "If you are using Java for platform-independent development, go forward keeping in mind Java's strengths and weaknesses."

Susan Schweizer, senior vice president of technology, architecture and planning at Fleet Bank Corp. in Albany, N.Y., said she is hedging her bets.

"When vendors of their stature go to war, we, as end users, have to figure out what their strategies will be in one-upping each other as opposed to figuring out the best technical solution for our business model," she said. "If we can afford to wait until the dust settles, we will. If not, we'll be forced to make a choice." □

Computerworld *staffers Matt Hamblen and Allan Alter contributed to this story.*

FAQ: Standards war moves to court

Q: What is Sun's complaint?
A: Sun says Microsoft intentionally changed its version of Java to damage Java's cross-platform capabilities, left out key pieces of Java technology and used the Java trademark on Internet Explorer 4.0, which failed Java compatibility testing.

Q: What pieces of Java are missing from Microsoft's Internet Explorer 4.0?
A: Sun says Microsoft failed to ship two key components in Internet Explorer 4.0. The first is the Java Native Interface, a set of functions that enables Java programs to access peripheral devices such as printers, modems and fax machines. The second is the Remote Method Invocation, another set of functions that will let two Java programs share data with each other but doesn't require the use of the Windows operating systems.

Q: Why does Sun believe that Microsoft's actions are illegal?
A: Sun and Microsoft signed a five-year Java license agreement in March 1996. Sun says Microsoft has breached that contract.

Q: What is Sun asking for?
A: Termination of Microsoft's Java license, no future claim by Microsoft that its products are Java compatible, an accounting of Microsoft's Java-related profits and compensatory and punitive damages.

Q: What is Microsoft's response?
A: Microsoft says Sun's suit is "outrageous" and claims that Sun made false statements about the terms of the license agreement in the lawsuit.

Dueling CEOs

There was plenty of free advice at ITxpo 97 . . . only it didn't come from Gartner Group consultants. Scott McNealy and Bill Gates traded barbs while offering up the following to attendees:

Scott McNealy's response to Microsoft's suggestion, before Sun's lawsuit, that the Java logo be put into the public domain:

"It was kind of Microsoft to tell us how we should run our company, put Java logo in public domain. That's kind of like Mike Tyson giving culinary advice."

McNealy's advice for the Gartner audience on how to send a message to Microsoft:

"You all tell Microsoft to cut it out. Get with the 1990s. Get with the Web. Get compliant. Don't try to make it a 'write once, run on Windows' environment. We will need your help to get this done. The best way you can do that is to go purchase Navigator. A browser without Java is like a car without a steering wheel. They just ripped off the steering wheel."

Bill Gates' response to criticism he should fully back Java:

"We look to drive our own destiny. You should clearly label a product proprietary if it is not really an open standard. Yet they [Sun] use terminology like standard and open . . . like HTML."

Gates' response to McNealy's pitch for Navigator:

"You shouldn't be spending any money on browsers, because they are free. We thought about how to price it, and we're pretty low. So we thought, 'Let's keep it there.' Discount? It's a 100% discount."

In these turf wars, it's always the users who get hurt the worst

Users fear true cross-platform will be casualty of Java war

By Sharon Gaudin, Laura DiDio and Matt Hamblen

JAVA MAY BE the battle cry of this war between Sun and Microsoft, but the battleground is over an open environment.

Although Microsoft Corp. is just one of 117 Java licensees, the Redmond, Wash.-based company is the only one to have compliance issues, according to Sun Microsystems, Inc. CEO and President Scott McNealy. Fanning the flames of discontent, Microsoft officials recently said the company won't support the standard Java Foundation Classes and they are pushing dynamic Hypertext Markup Language as a rival means of producing cross-platform accessible-applications.

At the center of the dispute between Sun and Microsoft is the Java language, which was designed to let developers write once and run over many platforms.

Microsoft's petulance is driven by fears that "Sun will do to them what Microsoft did to IBM by putting Windows on top of DOS," said Scott Winkler, an analyst at Gartner Group, Inc. in Stamford, Conn.

> **"I cannot look at what Microsoft did as anything but a direct attack on portability."**
>
> **– Rick Ross, The Java Lobby**

Things came to a head last week when Sun filed suit against Microsoft, charging that the recently released Internet Explorer 4.0 browser isn't Java-compatible. Sun alleges that Microsoft has been trying for months to splinter Java and retard its momentum because it offers a choice to users who were once locked in to the Windows platform.

Microsoft fired back in a written statement, claiming that it "has delivered the most compatible implementation of Java in the marketplace and is well within the terms of its agreement" (see related story, page 16).

USERS SPEAK UP

The heated war of words between Sun and Microsoft might seem to be just a vendor wrestling match. But the outcome will strongly affect user development plans and budgets, and in interviews last week, there was no shortage of opinions on the subject.

"McNealy and [Microsoft Chairman Bill] Gates should shake hands, end their differences and fix the problems," said Dean Johnson, a senior technical specialist at Freudenberg-NOK General Partnership in Bristol, N.H.

"If I had Gates and McNealy in front of me, I'd slap them both and say, 'Wake up, and get real. The ocean is big enough for everyone to catch a lot of fish,'" said Paul Soares, vice president and general manager of Alden Buick Pontiac in Fairhaven, Mass. "As it is, though, all I can do, as a user, is stand aside and wait and see what happens when the dust clears." Soares is a member of a General Motors Corp. committee that will decide on a Windows NT migration strategy for more than 8,500 GM dealerships nationwide.

"It's nice to see Microsoft dinged once in a while," said Michael Bachert, LAN manager at Columbia Gas System Service Corp. in Columbus, Ohio. "The truth is somewhere between Gates and McNealy."

"[Internet Explorer 4.0] is not true Java. I'm sticking with Navigator," said Rick Ross, founder of The Java Lobby, an independent organization comprised of Java developers. "I cannot look at what Microsoft did as anything but a direct attack on portability." Ross claimed that The Java Lobby swelled from 1,000 members three weeks ago to nearly 7,000 at the end of last week. □

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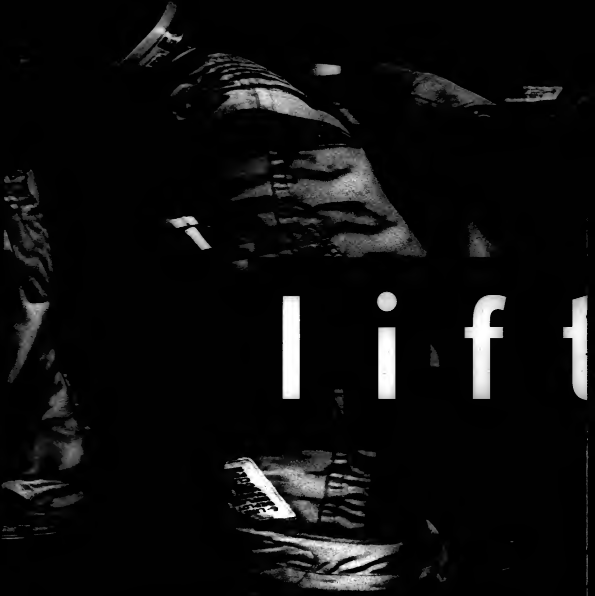

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Analysts urge caution in long-term MCI negotiations

By Matt Hamblen

ORLANDO, FLA

WORLDCOM, INC.'s $30 billion bid to buy MCI Communications Corp. has thrilled equity analysts and MCI stockholders, but some industry observers are advising MCI business customers to exercise caution.

"I'm not saying to not sign MCI contracts, but consider [if the deal goes through] that there might be departures of key executives at MCI and consider there will be likely delays of global deployment" of merged networks and services, said Gartner Group Inc. analyst Ken McGee to a crowd of telecommunications managers at Gartner's IT Symposium here last week.

McGee said telecommunications managers in negotiations with MCI should extend their current MCI agreement only for a year "until we get more answers" on how a WorldCom purchase would work. Meta Group, Inc. analysts issued similar warnings.

"This feedback emphasizes the need not to jump quickly" in contract discussions with MCI, said William Lazarus, director of telecommunications at Horizon/CMS Healthcare Corp. in Albuquerque, N.M. "I would not recommend to my company any long-term commitment [to MCI] past two to three years."

In response, WorldCom Senior Vice President Josh Howell said he "couldn't disagree more strongly" with the analysts' advice. Howell said that the MCI/WorldCom integration would be "smooth" and that WorldCom has experience in making mergers work. In fact, WorldCom's top 20 executives include 16 who came on board through mergers, he said. MCI officials had no comment.

"I'm not saying to not sign MCI contracts, but consider that there might be departures of key executives at MCI and ... likely delays of global deployment."

– Ken McGee, Gartner Group

Horizon/CMS is about to merge with HealthSouth, Inc. in Birmingham, Ala., and Lazarus will oversee the merger's telecommunications planning, including which vendors are used. HealthSouth uses MCI in Washington for all its telecommunications services, and Horizon/CMS uses Sprint Corp. in Kansas City, Mo., for frame-relay network services and AT&T Corp. in Basking Ridge, N.J., for a majority of its voice services.

"My perception of WorldCom is that they're not all that high-tech," Lazarus said, based on his experiences and those of colleagues. He said it doesn't always use redundant central office switches to protect its networks and has had problems restoring service after outages.

Gartner analyst Eric Paulak said Gartner is concerned about WorldCom's performance in integrating past acquisitions, including UUnet Technologies, Inc. in Fairfax, Va. "This is a good deal for stockholders, but not necessarily for [MCI] customers," Paulak said.

He said interviews with some board members indicated the MCI board will vote against the WorldCom bid within two weeks. But observers also are speculating that stockholders, seeing a good increase in their investment, will try to overrule the board.

MCI's ongoing merger with British Telecommunications PLC is more in the long-term interests of MCI customers, especially to the large multinational firms that want to go global, both Gartner analysts said. □

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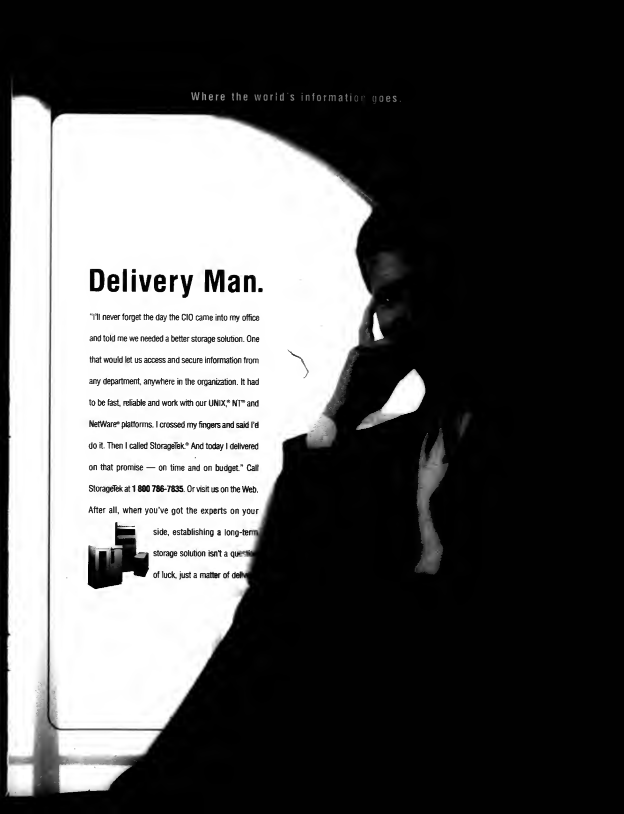

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Storage takes on modular flexibility

► *Vendors promise easier building-block approach*

By Tim Ouellette

STORAGE VENDORS ARE starting to give users more wiggle room.

Symbios Logic, Inc. this week will announce its line of MetaStor subsystems, made with modular hardware and software building blocks.

The move by the Fort Collins, Colo., company follows on IBM's plan to deliver its storage systems based on a similar modular architecture called Seascape [CW, June 23]. Digital Equipment Corp. also is adding modular features to its StorageWorks line.

Vendors are offering more flexibility because as users tackle big projects, storage is becoming a larger part of the cost of buying new servers (see chart).

And with changing storage and networking technologies — such as upcoming Fibre Channel support — users want to avoid the high cost of constantly replacing disk subsystems, which can run into the millions of dollars.

"People are looking for modular approaches to solving their problems," said Rick Westerman, an analyst at Meta Group, Inc. in Stamford, Conn.

Symbios Logic's MetaStor systems, which will ship in November, include command modules, drives, host adapters, tape libraries and storage management software that can be mixed and matched in various configurations as needed.

More in store

Users expect storage demands to continue to grow this year and are seeking flexible ways to upgrade their storage systems to meet these needs

→ What will your storage growth rate be in 1997?	22%
→ How will nonmainframe storage grow in 1997?	39%

Base: 200 IT managers
Source: Soundview Financial Group, Stamford, Conn.

"MetaStor will let us become much more versatile for multihosting on the same devices and scaling the amount of storage," said Paul Cioni, a storage manager at ServiceNet, an Andersen Consulting subsidiary in Minneapolis. "In our current environment, we had to size our database engine [servers] to the amount of storage we had."

With MetaStor, users can scale from small, departmental systems to data center devices in the same box.

"Because a lot of projects [especially data warehouses] start out very small, when the project takes off, storage devices that can scale from the low-end can get their foot in the door," Westerman said.

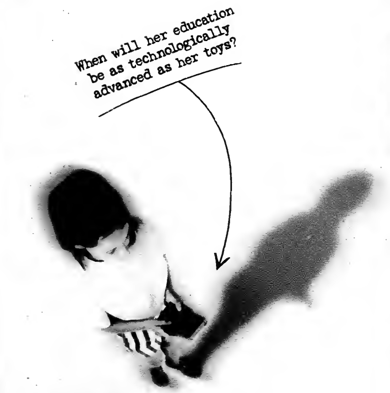
Some larger shops may choose to buy excess storage capacity on data center disk systems.

For example, storage giant EMC Corp. in Hopkinton, Mass., has kept its high-end Symmetrix subsystems in use for up to five years by constantly offering firmware upgrades to add features and technology support, company officials said.

But in the future, flexibility in moving storage hardware as companies grow and reorganize may take on more importance.

And although IBM's Seascape promises to allow users to change the system controllers without requiring a forklift upgrade of the box, the company has yet to deliver, said John McArthur, an analyst at International Data Corp. in Framingham, Mass.

Such a disk system is in the works for the coming months, IBM officials said. ☐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*This result was based on a 16 processor, HP 9000 V2200 running Sybase's Adaptive Server Enterprise 11.5.

Year 2000 legal issues, staffing are top worries of state CIOs

By Patrick Thibodeau
WILLIAMSBURG, VA

CHIEF INFORMATION officers for state governments claim that their year 2000 projects are well under way, but two worries linger: legal liabilities and staff defections.

States with computer snafus related to the year 2000 problem could be sued for everything from malfunctioning traffic lights to missing benefit checks, officials said. And staffing problems could slow the repair work.

At a recent gathering of state CIOs, Gartner Group, Inc. analyst Ian Temple said about half of all government agencies in North America won't solve the year 2000 problem in time, so "you have to plan for failure." He spoke at the National Association for Information Resources Executives conference here.

SHAPING UP

But talk to almost any state CIO, such as Tennessee's Bradley Dugger, and you will hear mostly confidence about the repair effort.

"We feel like we're in good shape. We're planning to party — a year 2000 party," Dugger said. The state has completed fixes on 65% of its code, he said.

Acknowledging the possibility of a less-than-successful year 2000 repair effort could eventually come to haunt a CIO in court, according to one state CIO who has researched the issue.

TOP ISSUES OF STATE CIOS

- **Automating welfare reform. It will cost $1.1 billion over the next five years.**
- **Exodus of IT talent to private sector, which is impacting year 2000 efforts.**
- **IT outsourcing.**
- **Federal IT mandates, especially welfare reform.**

The problem is that any memos or statements that predict a system failure could be exploited to show that the state knew about the problem in advance and didn't fix it.

Taxpayers "should not be asked to pay any litigation costs as a result of any [year 2000] suit."
– Marlene Lockard, Nevada's CIO

"Be cautious of year 2000 documentation that you may have, especially predictions of doom," advised Charles Gerhards, director of the Central Management Information Center in Pennsylvania. Such statements are the equivalent of a smoking gun, he said.

Gerhards also recommended that information systems officials meet with legal counsel "to review your state's vulnerability, as well as your own."

Nevada has taken steps to immunize itself against year 2000-related litigation.

The state passed legislation that puts year 2000 failures on par with "acts of God," said Marlene Lockard, the state's CIO in Carson City.

Taxpayers are already paying enough to correct year 2000 problems, "and they should not be asked to pay any litigation costs as a result of any suit," Lockard said.

TALENT DRAIN

Despite the veneer of confidence about year 2000 repair efforts, keeping key technical staff on the job has become as tough as running on ice for some states.

Texas agencies, for example, can offer bonuses of up to $5,000 per year for two years to employees who agree to stay through May 2000. But Carolyn Purcell, the state's CIO in Austin, said the program's success has been limited. "People are getting signing bonuses [elsewhere] that sort of make that look puny," she said.

Texas is competing against private companies that offer signing bonuses as high as $25,000, along with big increases in salary, Purcell said.

"There are agencies in Texas that tell me that they have had 100% turnover [of technical staff] in the last year," she said. ☐

Microsoft project management pack wins over users

▸ *Overhaul adds groupware-like abilities*

By Gordon Mah Ung

MICROSOFT CORP. this month will release a completely revamped project management package that features groupware-like abilities such as messaging to team members over corporate intranets.

Using Microsoft Project 98, project managers can post the status of a project to an intranet and team members can update their progress, for example.

Project 98 also adds advanced management features such as project merging and task splitting. The package costs $499 for new users, and upgrades are $199.

FIRST IMPRESSION

Analysts and users said their initial impressions of Microsoft Project 98 have been positive.

"The new program is very easy and intuitive to use," said Jim Brennan, first vice president of information services and technology at Waterhouse Securities, Inc. in New York.

Brennan has been beta-testing Project 98 since this summer and has used it to manage everything from 24-hour production processes to two-month projects to produce and track customer statements.

"It's a good management tool," he said.

Ray Pennisi, project manager of product development at Symitar Systems, Inc. in San Diego, said he looks forward to using the upgraded Project, but he said he hit a snag trying to use the workgroup messaging feature on a trial version he downloaded from Microsoft's World Wide Web site.

Revamped Project 98 offers a road map to guide managers through all project phases

According to Microsoft officials, the problem Pennisi ran into appears related to the configuration of his mail server and isn't a problem with Project 98.

Pennisi said that despite the problem he had, he expects his company, which processes data for credit unions, will eventually adopt Project 98 because of its advanced features and close integration with other Microsoft products.

BRAND SPANKING NEW

"This is not just an incremental improvement; this is really a new product," said Matt Light, an analyst at Gartner Group, Inc. in Stamford, Conn.

Light said that with Project 98, Microsoft has attained feature parity with longtime project manager vendors in the desktop market, including Primavera Systems, Inc. in Bala Cynwyd, Pa., and Scitor Corp. in Menlo Park, Calif.

The previous iteration of Project could walk, but not run, Light said. "Now I would say it's up to speed."

According to market research firm PC Data in Reston, Va., Microsoft has more than 70% of the desktop project management software market. ☐

Middleware links systems over the 'net

By Randy Weston

Middleware bridges are beginning to hit the market, designed so client/server computing systems don't turn companies into islands upon themselves.

The latest product is from start-up CrossRoute Software, Inc. in Redwood Shores, Calif. Its software links enterprise resource planning systems from different companies over the Internet. The goal is to improve cooperation among companies and their suppliers by letting different systems work together to plan deliveries and production as well as manage inventory.

CrossRoads Software, Inc. in Burlingame, Calif., earlier this year launched a similar product designed to link disparate systems within a single company [CW, July 21].

Analyst Scott Lundstrom at Advanced Manufacturing Research, Inc. in Boston said the market is ripe for such products. "Users don't want to own source code," he said.

Adaptec, Inc., a $1 billion adapter card maker in Milpitas, Calif., runs SAP AG's R/3 software system to manage its business processes. Two of its suppliers use R/3, and a third runs System Software Associates, Inc.'s BPICS software. Adaptec uses CrossRoute's product to link its R/3 system to its suppliers.

"This automates the manual process that happens today, the faxing and mailing between purchasing groups and suppliers," said Steve Robinson, electronic-commerce manager at Adaptec. It was taking four to six days to get an order to a supplier in Asia, but it now takes five minutes, he said.

So far, CrossRoute has built links for SAP, PeopleSoft, Inc., Oracle Corp. and The Baan Co. Links are customized for other systems.

The product is scheduled for release by year's end. Pricing ranges from $250,000 to $1 million, and the average cost expected to be about $500,000 to link 10 to 20 partners. ☐

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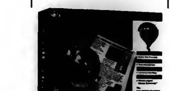

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Briefs

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DEC/Intel talks may bite users in future

▸ *CW survey shows worries about weaker Digital*

By Jaikumar Vijayan

IF DIGITAL Equipment Corp. unloads its much-marketed but little-sold Alpha chip technology on Intel Corp., the short-term prospect for users is good.

But for the company, and possibly users, the long-term outlook is less rosy.

A deal with Intel could attract more software development activity around the Alpha platform and possibly result in lower prices.

The move also will pump a lot of immediate cash into Digital's coffers while helping it get rid of a costly — and failing — business, observers said.

63% of users surveyed said they don't want Digital to focus on becoming a services company.

ALPHA STRATEGY

CEO Robert Palmer has positioned Alpha as the centerpiece of his turnaround strategy. But any arrangement involving Intel raises serious questions about Digital's continued commitment to the platform. It also raises questions about Digital's strategy going forward. Fifty-nine percent of 102 users surveyed by *Computerworld* expressed concern that selling the Alpha chip business will make Digital a weaker company, and 63% said they don't want Digital to focus on becoming a services company.

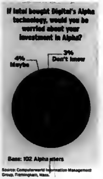
Analysts expect that Digital will go forward with a dual-architecture strategy during the next couple of years and then quickly migrate to the IA-64 chip technology that Intel is jointly developing with Hewlett-Packard Co. That could mean a forced and potentially disruptive migration to 64-bit Intel technology during the next few years, observers said.

But the deal would also leave 43% concerned that Intel might eventually drop support for Alpha and would have 48% concerned that Intel might try to force them onto an Intel platform.

"Digital is not stupid enough to kill off the Alpha," said Rob Young, VMS manager at Alpha user BDP International in Philadelphia. "But we won't be surprised if they transition everything to Intel in four or five years."

But all this is speculation. Digital and Intel are reportedly on the verge of hammering out a settlement that could bring a stunning conclusion to the messy patent battle between the two companies. A source at Digital confirmed that such an arrangement was in the works but didn't elaborate.

If Intel bought Digital's Alpha technology, would you be worried about your investment in Alpha?



Base: 102 Alpha users

Source: Computerworld Information Management Group, Framingham, Mass.

DIGITAL'S PLANS

Published reports citing sources involved in the negotiations said Digital will sell one of its chip plants to Intel for about $600 million.

Intel reportedly will license the Alpha technology for an additional $100 million to $200 million and gain rights to use Alpha technology in its own chips. Digital would win discounts of up to $100 million annually on chip purchases for the next seven years and continue to control new Alpha designs that Intel will make.

"I think it is one way of legitimizing the technology outside of the Digital installed base. I imagine it will give the Alpha more momentum," said Ronald D. Freed, MIS manager at Hatfield Quality Meats, Inc. in Hatfield, Pa.

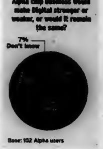
In the immediate aftermath though, a sale of its underutilized chip fabrication facility to Intel means Digital will get rid of what has become a huge albatross for the company during the past few years.

Although the 64-bit Alpha chip is widely regarded as being among the most technically sophisticated in the industry, the chip has so far been an abysmal failure for Digital in the mass market — last year, Alpha accounted for far less than 1% of worldwide chip sales, according to Semico Research Corp. in Scottsdale, Ariz.

Some analysts doubt that Intel will agree to any arrangement without getting something in return, especially because Intel is nearing completion on the competing IA-64 chip architecture it is developing with HP.

And any such arrangement could accelerate the demise of the Alpha chip, they said. □

Do you feel that selling its Alpha chip business would make Digital stronger or weaker, or would it remain the same?



Base: 102 Alpha users

Source: Computerworld Information Management Group, Framingham, Mass.

Ralph Nader eyes Microsoft business practices

By Stewart Deck

CONSUMER ADVOCATE Ralph Nader, saying he has heard a slowly building chorus of discontent about how Bill Gates and Microsoft Corp. intimidate customers and competitors, decided it is time something was done about it.

Nader has called an industry conference for Nov. 13-14 in Washington to take a look at Microsoft's business practices and their societal impact. Some Microsoft foes, including Scott McNealy, chairman of Sun Microsystems, Inc.; attorney Gary Reback of Wilson, Sonsini, Goodrich & Rosati; and Roberta Katz, general counsel at Netscape Communications Corp., are expected to speak at "Appraising Microsoft and Its Global Strategies." Sun last week sued Microsoft for breach of contract (see story page 1).

INTIMIDATION

Nader wrote to Gates strongly encouraging him to attend. "Self-censorship brought on by the detailed fear of Microsoft retaliation . . . is not healthy in any economy," Nader said in the Oct. 2 letter. "Thoughtful people in the business world who would otherwise have the position, energy and resources" to speak out are afraid to do so, Nader added. He also wrote that Microsoft is a "leading candidate for antitrust action if only the enforcement agencies had the up-to-date knowledge, willpower and resources" to take such action.

Mark Murray, a Microsoft spokesman, said Gates most likely would decline the invitation.

Although it is being criticized for its slow action, the U.S. Department of Justice is investigating several Microsoft acquisitions and practices, including its recent investment in RealNetworks, Inc. (formerly Progressive Networks, Inc.) and its purchase of Vxtreme, Inc. Both are multimedia streaming companies. In July, several senators requested the Justice Department look more closely at Microsoft's business practices, but the department declined.

Microsoft is also feeling some heat from five state attorneys general who have launched investigations into Microsoft's business practices. □

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OPINION

Alpha inside "If Alpha fails, DEC is dead" was how one analyst

put it years ago when Digital proudly unveiled the linchpin of its turnaround strategy: the superfast 64-bit Alpha chip. That quote kept rattling around in my head last week as stories trickled out about Digital's no-longer-secret negotiations with Intel.

The companies are hammering out an out-of-court settlement of Digital's high-profile patent-infringement lawsuit against Intel (see story, page 31).

The deal reportedly will have Digital walking away with a fistful of cash end some significant discounting arrangements with Intel, which gets to take over the floundering Alpha manufacturing plant in Hudson, Mass.

Intel — looking for all the world like a guilty party after all — is slated to get licensing rights to Alpha, which happens to be a major rival to its upcoming Merced chip (circa 1998/99). Whether Intel will muck around with adding Alpha design points to Merced probably falls into the "Who really cares?" category for most users.

But is this move really such a savvy business deal? In the short term, it could lead to a resurgence of application development around the Alpha chip and maybe even lower prices for customers.

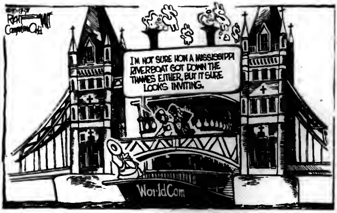
But in the long run, I think the deal signals a depressing denouement for a once-great computer manufacturer. Digital is destined to become little more than an Intel clone reseller and integrator of other companies' technologies. As Ross Perot would say, that's just sad.

Our exclusive survey last week of 102 Alpha users showed that the majority (63%) emphatically don't want their vendor focused on becoming a services company. And half of them already were worried that if Alpha withers on the Intel vine, users will end up force-marched into a disruptive migration.

Has Alpha failed? Is DEC dead? Certainly not yet. But no one said it would be quick end painless.

Maryfran Johnson

Maryfran Johnson, *Executive editor*
Internet: *maryfran_johnson@cw.com*


I'M NOT SURE HOW A MISSISSIPPI RIVERBOAT GOT DOWN THE THAMES EITHER, BUT IT SURE LOOKS INVITING.
WorldCom

LETTERS

Users offer the scoop on TCO

THANKS SO MUCH for cheering up my day with Editor Paul Gillin's Up Froot column, "Fun with TCO" [CW, Sept. 1]. I laughed all the way to my coffee pot, er, sun tea in the fridge.

Incidently, if you are looking for lower total cost of ownership, try sun tea. The sun does all the work and never has to be replaced.

The only extra cost here is the annual dental bills for yellowed teeth!

Lori Schwind Murray
Public relations manager
Tangram Enterprise Solutions, Inc.
Cary, N.C.
www.tesi.com

PAUL GILLIN'S PIECE on TCO got me thinking. It seems that this notion became epidemic after the great Tinker Toy binge, also known as TCB (total cost of the box). Technology seers were suggesting that organizations could do their computing oo a bunch of Intel boxes connected by networks. Big, expensive mainframes would disappear, probably within months.

The exuberance over TCO seems to have caught on when it was discovered that there were other — and quite substantial — costs besides the box. Mainframes oo longer looked so expensive by comparison. What a surprise!

Now it's time to recognize the TCM (total cost of myopia). Those wonderful projects that promised great leaps forward and ate holes in budgets will become lessons for better decision-making. The savings will be directed to initiatives that offer a return on investment.

Roger Beer
Natick, Mass.
rbeer@allmerica.com

I ENJOYED YOUR "Fun with TCO" column. But there's really no TCO for coffee. As a buddy from West Texas ooce pointed out, "You only rent coffee and beer." Maybe there's an analogy with software costs?

Samuel B. Trickey
Professor, physics and chemistry
University of Florida
Gainesville, Fla.

Read the fine print of Microsoft/Sun agreement

THE HYPE about Java today is only eclipsed by hype over the "fracturing" or splitting of the language into two camps. Although any Microsoft vs. Sun story is always a draw for readers, tales of anyone stealing away Java are drawn from pure ignorance.

Microsoft licensed Java from Sun. If Microsoft chooses not to embrace all of the constructs and application programming interfaces that are part of Java as stated by its creators, then Microsoft will lose its license to Java. Microsoft will then be left with something with Java-like qualities but will not be able to call it Java. In fact, it will be Windows and ActiveX, which is not what the public wants.

Microsoft should reexamine why it licensed Java in the first place. You and your staff should read the fine print of the Java licensing pact Microsoft signed with Sun.

Dan Pacek
Jefferson, Mass.
dpacek@tesent.com

Technical abilities a must

I CONCUR 100% with *Computerworld* columnist Leilani 'Allen: CIOs must be technologists first and businesspeople second ["CIOs wanted; amateurs need not apply," CW, Sept. 8].

A CIO who doesn't know technologies — regardless of how business-smart he or she is — is much more dangerous than one who is a technical expert but weak on the business skills.

CIOs must be technologists first

Yet in my work with CEOs, CIOs and senior IS professionals in Silicon Valley, I have yet to see a CIO lose a job over technical abilities. Most often, it's a lack of business understanding. A group of CEOs and CIOs have helped us put together an IS educational program that covers the soft business skills that CEOs say are needed. Our enrollments are high in these programs.

Keep up the great articles!

John Blumenson
Executive Development Center
Santa Clara University
Santa Clara, Calif.
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Computerworld welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include ao address and phone number for verification.

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- 23. Dir./Mgr Network Sys., Data/Tele. Comm., LAN Mgr./PC Mgr., Tech. Planning, Administrative Services
- 23. Dir./Mgr Sys. Development, System Architecture
- 31. Programming Management, Software Developers
- 41. Engineering, Scientific, R&D, Tech. Management
- 60. Sys. Integrators/VARs/Consulting Management

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- 12. Vice President, Asst. Vice President
- 13. Treasurer, Controller, Financial Officer

DEPARTMENTAL MANAGEMENT
- 51 Sales & Mktg. Management
- 70. Medical, Legal, Accounting Mgr.

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- 90. Other Titled Personnel

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- (b) NetWare (f) Windows NT
- (c) OS/2 (g) Windows
- (d) Unix (h) NeXTStep

App. Development Products	☐ Yes ☐ No
Networking Products	☐ Yes ☐ No
Intranet Products	☐ Yes ☐ No

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- 51. Sales & Mktg. Management
- 70. Medical, Legal, Accounting Mgr.

OTHER PROFESSIONAL MANAGEMENT
- 80. Information Centers/Libraries, Educators, Journalists, Students
- 90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply.)

Operating Systems
- (a) Solaris (e) Mac OS
- (b) NetWare (f) Windows NT
- (c) OS/2 (g) Windows
- (d) Unix (h) NeXTStep

App. Development Products	☐ Yes ☐ No
Networking Products	☐ Yes ☐ No
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Novell revisited

Brett Arquette

A year ago, I wrote an opinion piece for *Computerworld* called "Does Novell have any pulse left?" Judging by the flame mail I received, I'm sure some of you remember that column. (And by the way, were the comments about my mother necessary?)

A year later, the question still remains: Does Novell have any pulse left?

At the time, I knew the article would irritate some Novell devotees.

After all, Novell reported revenue of $530 million that quarter — someone must have been buying NetWare.

But none of the five network and system managers I had interviewed recommended Novell over Windows NT.

OF DIFFERENT MINDS

Of the mail I got on the subject, about 11% fell into the "I love NetWare, and you're a #$*$! jerk" category.

Another 11% fell into the "I love NT, and you're wonderful" category.

About 30% of the mail fell into the "NetWare is better than NT because . . ." category, with an equal amount going into the "NT is better than NetWare because . . ." category.

The thing that surprised me most was the number of responses I placed in the "We run NetWare and are migrating to NT" pile.

Believe it or not, out of all the E-mail I received, I didn't get a single response from anyone running NT and migrating to NetWare. True, at the time NT was relatively new, but many of the people who wrote were running both platforms.

Now, more than a year later, there are still several things that bother me about Novell's stability.

Sure, the $90 million in revenue Novell posted this quarter — a $122 million loss — doesn't instill a great sense of confidence.

But there are other factors that make me shake my head and wonder, "What the heck are those people thinking?"

MIGRATION STRATEGY

For example, Novell will give away an $800 migration tool (RexxWare) from Simware, Inc. to entice users to migrate from NetWare 3.x to 4.x. I think that's great news.

Any company that comes out with a new version of software should supply a free migration tool.

What bothers me about the whole thing is: a) Why did Novell wait so long to do it? and b) Why did another vendor write the migration software?

Think about it.

At last count Novell had more than 4,800 employees. Are you telling me that they all sat around for a year scratching their heads, watching the stock nosedive, wondering how to get people to upgrade to Version 4.n, while another company was busy writing the migration code?

Why didn't Novell write the code and give it away while the product was still hot? You would think if the upgrade is that nasty, the migration tools would come bundled in every version of NetWare 4.n.

The other thing that bothers me is that in all the time since that original column, I still haven't encountered an organization that chose to install NetWare over NT.

Granted, I'm swamped with the day-to-day operations of running an information systems shop and don't have a chance to contact as many associates as before. But out of the 11 shops I know that have cranked up client/server platforms recently, all went with NT.

I'm past the point of wondering which product is better. Both have their specific strengths and weaknesses. But a year later, the question still remains: Does Novell have any pulse left? □

Arquette is manager of IS at 9th Judicial Circuit Court in Orlando, Fla. His E-mail address is barq@iag.net.

Will the dinosaurs take over Internet commerce?

John Gantz

A lightbulb went off in my head during, of all times, a recent presentation by Keith Todd, CEO of ICL — once the sole mainframe vendor from England, now a Fujitsu subsidiary.

Todd was speaking about major Internet applications his company had helped customers implement.

His presentation was one of many I have heard in the past four weeks — first at Internet Commerce Expo in Los Angeles, then two weeks ago at my company's conference, Internet 98. I saw scores of serious Internet-based business applications paraded before various audiences.

BIG BUSINESS

Internet commerce, or "E-business," as IBM likes to call it, is past the experimental stage. It may even be past the early-adopter stage. My company's forecast that $223 billion worth of goods and services will be purchased over the Internet in 2001 (most of it business-to-business transactions) looks secure, maybe even conservative. That's been the major theme of the past month.

But there's an implication that suddenly became clear as I listened to Todd.

For all this E-business to occur, users will have to integrate an awful lot of legacy systems, heterogeneous databases, and multicountry/multicompany information and transactional systems. That integration will easily cost more than the basic underlying hardware and software platforms. It could quickly change the decision criteria for choosing vendors. An International Data Corp. (IDC) survey of U.S. businesses earlier this year confirms that the No. 1 problem with implementing Internet applications is lack of staff for ongoing support; next on the list is integration.

If you're hooking up a bunch of transactional databases, networking with suppliers and building a complex enterprisewide application, would you rather deal with a systems vendor that's worked this street for 30 years and maybe even has its own global network, or with a vendor organized to design and market shrink-wrapped software?

I know Microsoft is behind a lot of major Internet applications, for example, at Barnes & Noble, where a major switch from Unix to Windows NT took place. But for the average risk-averse multinational that needs to mix the Internet with transactional systems, can Microsoft and its resellers offer the same integration and service support as a full-line systems company?

Many of the users I talked to in the past month have told me that now that Internet (and intranet) applications have spread like weeds in various departments of their companies, they are trying to bring some enterprisewide order to them.

If information-centric departmental applications drove Internet and Web technology adoption in the past several years, it will be transaction-centric applications that drive it going forward. Sorry, but I don't think this shift in application design focus plays to the strengths of the vendors — such as Microsoft, Netscape and Sun — that have dominated Internet applications until now.

Can Microsoft offer the same support as a full-line systems company?

The bottom line is that all those companies once considered dinosaurs — the IBMs, Digitals, CAs and ICLs of the world — have skill sets that match almost perfectly what users will need to make the great leap to Internet-based computing. IBM's announcements this week of a bunch of E-business services are a recognition of that need.

Anyone who has built a house or a home addition can tell you: The finish work takes a lot longer and costs more than the framing. The next wave of Internet buildout is like that finish work.

Keep that in mind when choosing an Internet vendor. You want one with a well-trained, well-managed crew that can handle the job start to finish. □

Gantz is senior vice president at IDC in Framingham, Mass. His Internet address is jgantz@idcresearch.com.

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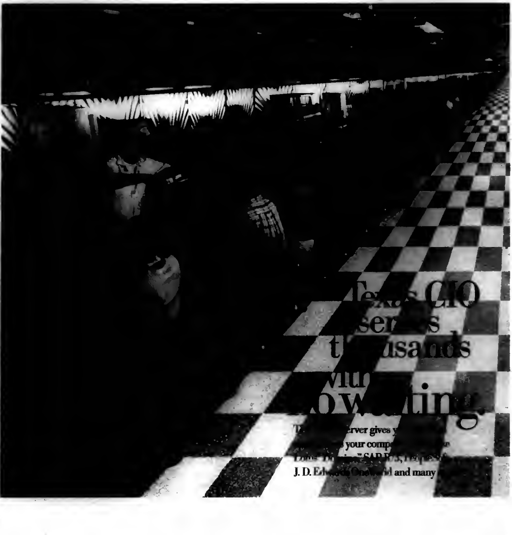

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Retail outsourcing pact

Allied Domecq Retailing USA in Randolph, Mass., has hired Olsy North America (formerly Olivetti North America) to provide point-of-sale hardware and information technology services to its 6,000 Dunkin Donuts, Baskin-Robbins and Togo's stores nationwide. Under the five-year, $57 million deal, Olsy will provide services such as procurement, installation, training and help desk support.

Wang wins contract

Wang Laboratories, Inc. in Billerica, Mass., has been awarded a five-year, $539 million contract from the U.S. Immigration and Naturalization Service (INS). Under the INS Field Operations Support and Hardware Maintenance contract, Wang will provide desktop management, network support services, help desk services, maintenance and installation support.

Speech tools pilot

United Airlines in Chicago is preparing to roll out a speech-recognition system from Applied Language Technologies in Cambridge, Mass. Its employees will book flight reservations by stating the cities of origin and destination and the day and time of departure. If the test is successful, United may extend the service to its customers.

Top five industries that will employ IT workers in 2005

Computer services	44%
Computer and office equipment	18%
Telegraph and communication services	14%
Search and navigation equipment	8%
Life insurance	8%

Percentages indicate percent of industry workers that are computer scientists and engineers, systems analysts and computer programmers

Source: Bureau of Labor and Statistics and Department of Labor, Washington

IS vets organize to beat job bias

▸ *Database markets year 2000 wisdom*

By Julia King

THOUGH HE HAS more than 30 years of experience as a computer programmer, Jim Wick lists his experience as "three-plus years."

On job applications, he doesn't fill in when he attended school. But he learned that the hard way.

"Whenever I put down my graduation year, I never got an interview," said Wick, who graduated in 1962 from San Francisco State College. Two years ago when he was 60, he even dyed his hair from gray to brown to look younger. But still, Wick said, he couldn't land contract programming work in youth-conscious Silicon Valley. Eventually, he found and accepted a five-month programming job at a mortgage software company in Indiana.

Wick, who retired in 1995 from General Electric Co. in San Jose, Calif., is among the 7,000 or so programmers, systems analysts, designers and testers who have registered with Senior Staff 2000, a database of downsized, retired and other over-50 information systems professionals with Cobol and other mainframe IS skills.

The database is the brainchild of Bill Payson, a 73-year-old management consultant in Campbell, Calif. It was designed to match older but frequently overlooked IS professionals with companies that need skilled people to work on year 2000 projects. More than 100 names are added daily to the database.

With just 26 months left until the year 2000, "you have to go outside of the conventional

Retirees, page 40

Retired project manager Gordon Clark says high-tech companies are more interested in up-and-comers than retirees

IT OVERHAUL

Staff issues color Avon makeover

By Thomas Hoffman

CHANGE IS YOUR FRIEND. Yeah, right. Try telling that to the untrusting IT staff you have just inherited.

Spencer McIlmurray did. But unlike others assigned the role of "change agent," who often fail, his three-year turnaround effort at Avon Products, Inc. brought a glow back to its information systems group.

That's because Avon's vice president of information technology services tackled the thorny people issues, such as dealing with change-resistant employees, that typically derail most change-management initiatives.

Brokering a smooth transition has a business payoff. Organizations that handle personnel issues effectively during

Avon, page 40

Business needs force deals with shaky firms

By Craig Stedman

THE THOUGHT of taking a chance on a struggling vendor or a product with an uncertain future may not be very appealing. But IS managers often find they have little choice.

When business needs point them toward a specific product or vendor, information systems executives may be forced to bite the bullet and buy, even if the purchase adds a dash of risk to their jobs.

For example, Private Healthcare Systems, Inc., a managed-

Business needs, page 42

CHRISTOPHER FITZGERALD

Private Healthcare's Jim Poole: Sybase "gave us all the right reasons why we should go with them"

Railway lays track for new processes

By Jaikumar Vijayan

TWO YEARS INTO a sweeping reorganization, the IS department at the Canadian Pacific Railway is learning to cope with change.

Fueled by a 20% information systems staff cut, employee relocation, increased reliance on automated business practices and a gradual move from mainframes to distributed computing, the railway's IS group and consultants at Hewlett-Packard Co. are developing a new systems management blueprint.

A $2.8 billion railway that has 17,500 route miles across Canada, Toronto-based Canadian Pacific went through a reorganization that was completed last year. The company laid off more than 1,000 employees, trimming the payroll to 21,000. It consolidated management functions from five geographic

Railway, page 40

Year 2000 a companywide problem

▸ *System failures are inevitable, managers must prepare for them*

By Patrick Thibodeau
ORLANDO, FLA.

CRAIG DRUMMOND, a year 2000 project manager, didn't like what he was hearing.

Companies won't be able to save all their systems from year 2000 failures, said analysts and consultants at a recent Year 2000 Conference held here by Andover, Mass.-based Digital Consulting, Inc.

Litigation costs will soar, heads will roll, and the date glitch will threaten every aspect of a business — from customers to a company's reputation, the speakers warned.

"It's not an IT problem," said Drummond, who works at Progressive Tool and Industries, Inc. in Southfield, Mich. "It needs to be addressed at a much higher level, and that's not the attitude my company has right now. They don't understand the risk."

That was the message Drummond planned to take back to his 4,000-employee company, which builds and installs robot-assisted automotive welding systems. Drummond began working on the year 2000 problem about a month ago, after the company received letters from several big automakers asking about his company's efforts.

PLANNING AHEAD

Urging management to plan for possible year 2000-related business disruptions, such as delays in processing orders, is one of the jobs of information systems leaders, said Leland G. Freeman, a management consultant based in Framingham, Mass. "You need to start broadening the thinking on the management of the project," he said.

But most companies haven't set aside enough time or money to address the problem, said consultant Ken Orr of the Ken Orr Institute in Topeka, Kan. "Many of our systems are dead men walking — they're already dead," he said.

IS officials were told to concentrate instead on saving their businesses. "It's not the applications anymore that are important; it's the services," said year 2000 consultant Peter de Jager in Brampton, Ontario. "What services cannot fail?"

To focus a company's resources on fixing its year 2000 bugs, de Jager recommends a form of "triage," shutting down systems that aren't critical. ☐

Avon's IT makeover

CONTINUED FROM PAGE 39

change cycles can typically slash one-third the time and cost it takes to complete the effort, said Lillie Brock, co-founder of Interchange International, Inc., a Falls Church, Va., change-management consultant.

McIlmurray, who joined Avon in December 1993, said operations at the New York-based cosmetics maker "were very functionally stovepiped." Systems supporting manufacturing and sales and marketing were poorly integrated, and critical systems such as billing were running on a kludgy IBM DOS/VSE PC-to-mainframe system.

To make matters worse, many of Avon's 330 IT staffers had worked in the same building together for "17, 18 years and didn't know each other. It was a very distrustful environment," said McIlmurray, who spoke at the Society for Information Management International's annual conference in Boston last month.

Avon's Spencer McIlmurray said he spent his first six months at Avon gaining the trust of the staff. That made the staff "more willing to take risks," he said.

McIlmurray said he spent his first six months at Avon gaining the trust of the staff. That approach made the staff "more willing to take risks," he said.

In mid-1995, McIlmurray went to Avon's board of directors and secured $100 million to revamp the company's IS infrastructure. Most of the funding went to rewrite applications to make it easier for Avon's 2.3 million sales representatives to access product and sales information, and a part was earmarked to send the company's IT staff to courses designed to improve their listening and marketing skills.

To pump up help desk productivity, McIlmurray moved Avon's help desk staff to window offices to improve morale and bought them ergonomically designed chairs at $900 each.

Several members of Avon's help desk wouldn't comment on the department changes.

Programmers, meanwhile, were sent into the field to work with end users during the company's fourth quarter — a move that raised some eyebrows because Avon historically generates 40% of its annual sales volume at year's end. "That's the best way for our [IT] staff to learn about the businesses in the trenches," McIlmurray said.

The results: Internal surveys show end users are more satisfied with help desk services than before, and programmers have a better understanding of the business, McIlmurray said.

Since the effort started three years ago, Avon has slashed its IT costs 36%. This is due in part by having a more productive technical staff, McIlmurray said. Most of the savings came from consolidating Avon's IT operations, he said. ☐

Railway lays track

CONTINUED FROM PAGE 39

locations into two. And it lost staffers who didn't want to change locations.

The goal of the process overhaul is to improve the availability and manageability of the railway's IS operations in the face of all this change, said Jane St. Germain, a technical services manager at the railroad's Toronto office.

NECESSARY CHANGES

Such process fixes could become increasingly critical for IS departments that are forced to adapt to rapid changes caused by reorganizations, mergers and acquisitions, observers said.

Companies go through such projects "to control costs, to become more productive and efficient, or because of the reorganization of work that comes from downsizing," said Marianne Hedin, an analyst at International Data Corp. in Framingham, Mass.

And Canadian Pacific's IS managers relate their changes to this bigger picture. "Like many companies, the railroad is in the midst of a huge transformation from a legacy mainframe world to a client/server world. Our business is also becoming a lot more dependent on IS," St. Germain said.

This past May, Canadian Pacific began overhauling its data center-based processes for managing service calls, system fixes and managing system changes.

For instance, new policies to handle an incident — such as the interruption of network service or calls to the help desk — clearly outline the steps to be taken, the tools available to handle the problem, the person responsible for carrying out the task and expected response times.

Similarly, problem management procedures identify common reasons for an information technology service failure and ways to fix it. Configuration and deployment processes map out procedures for tasks such as installing new technology or upgrading software. ☐

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Retirees work to beat job bias

CONTINUED FROM PAGE 39

workforce in order to meet the manpower needs. And the single largest untapped source of skill and talent is the retired community," Payson said. But to hear older professionals tell it, many companies — especially high-tech enterprises in Silicon Valley — have little, if any, interest in hiring them.

In the past few years, "I probably sent off 1,000 resumes, and it became very apparent that I was something to go away and sit on the shelf," said Gordon Clark, a 62-year-old retiree and part-time consultant who has more than 20 years of project-management experience and 10 years experience as CEO of his own software company.

"In the high-tech areas, they want what they believe to be the up-and-comers, and they don't understand there's a skill set out there that could get their chestnuts out of the fire real quick," said Clark, who joined the database.

The exceptions are companies such as System Partners, Inc., a Los Altos, Calif., consultancy that has agreed to hire Senior Staff 2000 workers who have completed a programming and year 2000 brush-up course sponsored by the University of California at Santa Cruz.

"In this business, clients want somebody who's very skilled, but they want somebody who has done [programming] for 20 years up until last Tuesday," said System Partners Vice President Steven Laine. Laine said many of the Senior Staff programmers "are very experienced people, but they've been away from the workplace" for between six months and five years.

WORKERS INTERESTED

So far, Payson said 20 Senior Staff workers,. representing more than 450 years of programming experience, have paid $285 each to complete the brush-up course, which was held for eight hours per day on three consecutive Saturdays.

Between now and December, two other brush-up courses will start in Orinda, Calif., and at the University of California at Los Angeles.

Once they have completed the course, Laine said the older professionals can expect to earn between $45 and $55 per hour. ☐

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Business needs force deals with firms

CONTINUED FROM PAGE 39

care services company in Waltham, Mass., early this year chose a set of administrative and analysis applications designed for health care firms. The rub: The software ran only on databases made by Sybase, Inc., which had just returned to profitability after three straight losing quarters.

"We could have decided at the 11th hour that we didn't want to go that way," said Jim Poole, vice president of enterprise support services at Private Healthcare.

But the chosen applications were the best fit for its business requirements. So, after long talks with Sybase, Poole and other IS executives were convinced the Emeryville, Calif., vendor was on the road to recovery and Private Healthcare went ahead with the deal.

Many companies with urgent technology needs find there simply are no safe havens in which to seek shelter. That forces them to settle for vendors or products that are encountering rough weather and then to hope for the best.

SETTLING FOR WHAT THEY HAVE

Multicare Cos., a health care provider in Hackensack, N.J., wound up in that position last year when it was looking for integrated directory and messaging software for LANs.

Banyan Systems, Inc.'s StreetTalk directory turned out to be "the only show in town," according to Tony Macaluso, Multicare's director of information technology, who was moving the company away from Novell, Inc.'s NetWare. The problem was that Banyan was already well into a financial slide that has yet to let up.

Multicare did get away from Banyan's Vines networking software and onto Windows NT once StreetTalk ran natively on NT. But Macaluso still doesn't see an alternative to StreetTalk. That's life, he said. "The software works for us, and I basically figure they'll be around in one form or another."

The city of Aurora, Colo., expects to buy Windows NT server software from Citrix Systems, Inc. that lets dumb terminals become virtual PCs. These plans are taking shape even though Aurora officials fear the whole setup will have to be redone because of a recent licensing deal between Microsoft Corp. and Fort Lauderdale, Fla.-based Citrix.

Microsoft plans to resell the software with its own communications protocol rather than the one Citrix uses. That could force changes if Microsoft's version becomes dominant, said Janice Richardson, manager of Aurora's systems and operations division.

"I worry about what the 800 million-pound gorilla is going to do to me," Richardson said. "But you can only make a decision based on the technology that's available when you need it. I need it today, and Microsoft isn't there."

MOVING ON

But some users hope their reliance on certain technologies will be short-lived. For example, Covance Laboratories, Inc. in Madison, Wis., this year bought Digital Equipment Corp.'s OpenVMS operating system, which has a huge installed base but doesn't attract many new users.

Covance, which analyzes food products and other items, had little choice because the chromatography application it chose runs only on OpenVMS. But the lab hopes to be able to convert its Digital box to Windows NT by mid-1998.

"We didn't buy it because we were in love with OpenVMS," said Patricia Prime, director of information services at Covance. "We really hope this is just a stepping-stone." □

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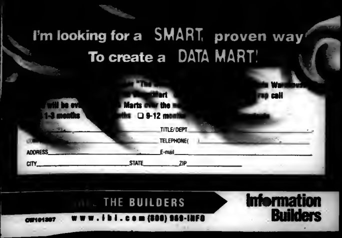

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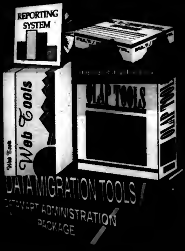

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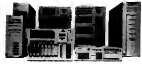

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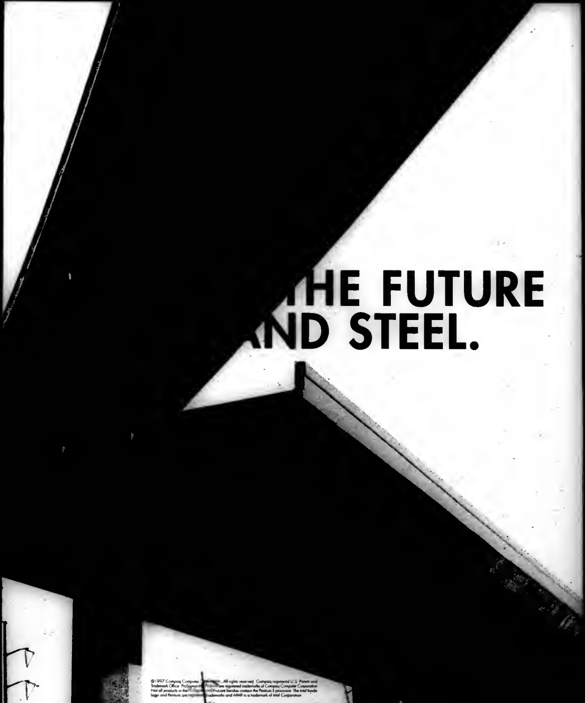

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The Internet

Electronic Commerce • The World Wide Web • Intranets

Readers: Get online!

By Barb Cole-Gomolski

MOST COMPANIES go to the World Wide Web to look for business. New York-based publisher John Wiley & Sons, Inc., is going to the Web to stay in business.

The publisher last month launched InterScience, a Web-based service that gives customers access to more than 400 scientific and professional journals. The company also will continue to publish its journals in print.

Wiley's technical readership — scientists, doctors and researchers — relied on the Internet long before the Web became popular for electronic commerce.

"We faced a sea of authors who were saying, 'What's taking you guys so long [to get on the Web]?' " said Gregory St. John, director of new media development at Wiley. Authors wanted to transmit articles via the Web, and readers wanted a searchable format that included the full text of articles, he said.

> A "sea of authors flooded Wiley with requests to get on the Web
> — Gregory St. John
> Wiley & Sons

In the past, the company made only tables of contents and abstracts of articles accessible over the Web. In contrast, InterScience includes approximately 40,000 full-text articles per year, complete with graphs and charts.

PEER E-REVIEW

The system also will let Wiley's authors submit articles and have them reviewed electronically by peers. And the company said InterScience will be a springboard for new services and products.

Wiley turned to Zuno, a Mitsubishi Electric Corp. subsidiary in London, for an application to organize, manage and publish information and journals over the Web.

InterScience subscribers will

Readers, page 50

BOOK REVIEW ▸ *Netizens*

'net is rich in history and impact

By Johanna Ambrosio

THIS BOOK is a must-read for anyone even remotely connected with or to the Internet. And that's true whether you agree with the authors' prediction that the Internet will bring far-reaching social and communications changes to the world — or their belief that it already has started to.

NETIZENS

On the History and Impact of Usenet and the Internet

By Michael Hauben and Ronda Hauben

IEEE Society Computer Press, Los Alamitos, Calif.

List price: $28.95* (hardcover) 345 pages

* With discount for IEEE members: $23.95

Part philosophical tome (inspired by the writings of Thomas Paine and Jean Jacques Rousseau), part social science and part history, *Netizen* is worth the price of admission solely for its look at some of the Internet/Arpanet pioneers.

The worthwhile part isn't just a discussion of how the technology developed, but what the inventors were thinking at the time.

J. C. R. Licklider, director of the Department of Defense's ARPA Information Processing Techniques Office, co-wrote a paper in 1968 that defined how computers could help people create knowledge by sharing information rather than just passing data back and forth.

Licklider and Robert Taylor, his co-author and ARPA colleague, viewed communication as an interactive creative process. That was way before the whiz kids of the Web came up with their various spinning whirligigs and whirling thingamabobs.

TOO MUCH?

Netizen also delves into the evolution of Usenet, time-sharing computers, the Unix operating system that is the foundation of the Internet and other precursors to the World Wide Web that most of us use today.

Where the book falls down is in all the other topics it tries to take on: the 'net and politics, the 'net and the media, expanding one's horizons on the Internet, and the 'net's future. The authors — and the numerous 'netizens they quote — certainly make valid and important points about each of those topics. But the book's structure suffers as a result of trying to do too much.

There is also too much opinion, especially in those latter portions of the book about the media and other topics. For example, statements such as "Only

Book, page 50

Panel: Don't let extranet fall to IT

By Johanna Ambrosio
SAN FRANCISCO

EXTRANETS ARE just too important to completely trust to the IT department — not on technical grounds, but because of cultural issues.

That was the consensus of a panel that included three extranet implementors, one of whom hails from an information technology group.

The panel members agreed that the "legacy" mind-set of some IT departments just won't map to extranet requirements.

Those include business process re-engineering and dealing with business partners and customers who have complex organizational and technology issues of their own.

Geri Spieler, a research analyst at Gartner Group, Inc. in Stamford, Conn., defined an extranet as two or more intranets linked together. They are membership-based and limited to trusted partners. They offer bilateral security and are based on virtual private networks.

NOT IT'S IDEA

"Our extranet came from a high-level senior management group that embraced the vision and then did it" with the help of many groups, including IT, said Ralph Liniado, senior vice president of business development at Manheim Auctions, a huge auto auction house in Atlanta. But, Liniado said, the original idea "couldn't have come from IT."

Liniado and the other panelists made their comments during the Intranet/Extranet conference, hosted by Gartner Group here last month.

One participant said the extranet development at his organization was going along fine until it landed in the IT group.

"That's when the problems started," said David Cannon, technical director for electronic catalogs at Management Technology Advanced Systems in Fairmont, W. Va.

Cannon helped develop the

Extranet controls, page 50

Briefs

[illegible]

The U.S. government plans to invest $15 million in a World Wide Web site for agencywide purchasing. The Defense Information Systems Agency signed a five-year contract with [illegible] Corp. to improve the [illegible] site ([illegible]); the goal is to turn the site into a one-stop electronic procurement center.

Firewall management

Raptor Systems in Waltham, Mass., will begin offering third-party content-management software with its Eagle firewalls and plans to integrate that product into Eagle within six months. The move to incorporate [illegible] from [illegible], Inc. in [illegible], Wash., is aimed to let systems administrators set up scans for viruses, hostile Java or ActiveX code and key phrases in electronic mail from within the firewall control panel.

[illegible]

[illegible], Inc. in [illegible], [illegible] announced TPS [illegible], software that lets users [illegible] information from a Web site without surfing the Internet. The software, an add-on option for the company's TPS Gateway Interface among disparate mail systems, delivers information from the Web either to a user's desktop or E-mail in-box.

TPS [illegible] will ship in the fourth quarter.

CONSUMERS ONLINE

- 71% have clicked on an Internet banner ad, but only 11% have actually made a purchase as a result.
- The average cybershopper spends about $142 per purchase.
- 71% shop online because of convenience.
- 57% are male, and 43% are female.

Base: 1,902 users and Internet service provider subscribers

Source: [illegible], Inc., Denver

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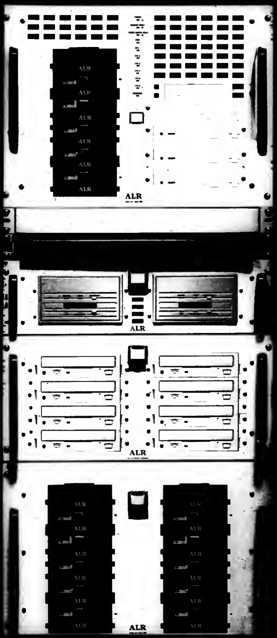

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Readers: Wiley, get online!

CONTINUED FROM PAGE 47

get a personal home page on which they can activate automated searches and store articles. Each journal also will have its own Web site with detailed information about the journal and links to related products and sites.

With Digital Publisher, companies load their documents into a secure repository. A Production module handles page loading and version control, and a Charge module lets companies specify which areas of a document customers can access and how they will be charged.

Initially, InterScience will be free to Wiley's authors, subscribers and registered guest users, but the company eventually plans to charge on a per-journal subscription basis.

Rita Knox, an analyst at Gartner Group, Inc. in Stamford, Conn., said that because Zuno recognizes the various components that make up a document — such as authors, abstracts and sections — it gives companies flexibility in how they charge for access. "Today, we tend to subscribe to an entire journal, but that will change over time," Knox said.

Subscribers will have access to the complete contents of the journal, but there are no plans to let customers buy individual articles at this point, St. John said.

Digital Publisher proved to be a better fit than the host of electronic-commerce servers on the market, St. John said. "Those products are fine for selling books over the Web, but our business is not transaction-based," he said.

Wiley also largely sells to libraries and may sell large collections to individual customers. "We needed to have a way to permit access rights to a large group of people that we don't interact with," St. John said.

With Digital Publisher, Wiley can sell 25 access licenses of a journal to a university library, for example. It also can decide on a journal-by-journal basis which abstracts are considered current. □

Extranet controls urged

CONTINUED FROM PAGE 47

World Wide Web site for the Defense Logistics Agency (DLA). The site is essentially a huge electronic-supplies catalog.

NO EXPERIENCE

The IT group at the DLA was an IBM mainframe shop The Web site was set up on a client/server system that the IT group had no experience with or, apparently, any desire to take on.

"The IT people do not want to host the hardware; the IT people do not want to look at the new development requirements. They want to know why this can't be done in Cobol," Cannon said.

Even the lone IT representative on the panel agreed there can be a cultural disconnect when it comes to extranets.

"I used to be in IT, then I resigned from IT to do the Web work," said Sherman Woo, director of global commerce at US West Communications, Inc. in Boulder, Colo.

"When we began to succeed, the CIO invited me back into IT," Woo said. But, he said, "I'm comfortable at the moment because IT is beginning to change" culturally.

Part of the change includes mixing new technology with old, as US West will do next year, when it begins hosting Web sites on MVS mainframes, Woo said. □

TIPS FROM THE PANEL

• Don't assume that the partners you are linking up have their data acts together.

The DLA had assumed that its suppliers had "data in some kind of electronic format that was out on their internal networks and could be made available to an extranet," said David Cannon, technical director for electronic catalogs at Management Technology Advanced Systems. But with large, diverse organizations, that isn't necessarily the case, he said. "3M, as an example, has data strung out among many divisions," Cannon said. So now 3M has a $34 million project under way to produce this internal network, he said.

▪ Keep a close eye on any external development partners.

"You have to make yourself important enough so that you'll meet your deadlines and meet your goals," said Ralph Liniado, senior vice president of business development at Manheim Auctions. Originally, Manheim had used a games developer to build its Web site. But it brought development in-house when the partner started, well, playing games.

▪ Contrary to popular belief, Web technology can be up to the task of delivering complex applications.

US West sells 3,000 telecommunications products and services in 14 states. Its Web site – essentially an order-entry site – brings up different rates, schedules and business rules, depending on what is ordered and in what state the customer resides. The site "demonstrates the agility of using Web techniques to build very sophisticated applications," said Sherman Woo, director of global commerce at US West Communications.

• Don't underestimate the effort required.

"It's not easy. You're trying to use your legacy systems and extend your core business," Liniado said. "The biggest surprise was just how damn hard it is."

Don't mess with the millennium bug—
take your best shot! Here's your automatic weapon.

Book explores history of 'net

CONTINUED FROM PAGE 47

by seeing many points of view can one figure out his or her position on a topic," are open to debate. Some might say that although diverse opinions are valuable, they don't need other people to tell them what or how to think. But disagreement is the stuff of which Usenet groups are made — and remade.

A more minor quibble: There is an appendix at the back of the book that defines acronyms, but it doesn't tell the reader what they mean. For example, MUSH is defined as "multi-user shared hallucination," but that doesn't help me understand what MUSH, as a concept, really is.

Finally, this isn't an easy read; much of it is academic in nature and will require some slogging and dedication to finish. Then again, it isn't necessary to read this cover-to-cover — perhaps you are most interested in the discussion of the past or in the authors' vision of the future. It is relatively easy to find and read only those parts. Still, a larger typeface and a strict copy editor — who could reduce the number of run-on sentences and typos — would have helped.

But overall, those negatives don't override my initial reaction — read this book. It is worth it because, as good books are supposed to, it makes you think. □

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We can guess your next question: "Isn't Windows NT just for enterprises?" The fact is, no it's not. We believe Windows NT is the world's most powerful business operating system. And small businesses everywhere are using this power on new PCs with big results. Why did they choose Windows NT Workstation? Here's what they told us.

"Windows NT allows my small company to do the work of a large company."

—Arabian, Hypnotic Fx

Windows NT Workstation is dependable. "Small businesses are no different from big corporations in one important respect," says Alton Loe of OSI. "Our computers need to run just as dependably. That's why we like Windows NT. It's bulletproof." Greg Hillenbrand of Fourth Shift concurs. "For us, running Windows NT on IBM ThinkPads was a no-brainer. We've been using ThinkPads for four years—but with Windows NT, we were suddenly able to do things we'd never done before. Windows NT is safe. It's stable. It doesn't disappoint us."

Windows NT keeps your data safe and secure even under the very toughest conditions. Ever accidentally leave your laptop in a cab? Or find out that someone who shouldn't have accessed your files did? We have, too. That's why Windows NT includes integrated security. This way more than one person can use the same personal computer, but each has access only to his or her individual files. "The key reasons we had Windows NT pre-installed on our new PCs was its security and scalability," says Mike Stone, Stan Wiley Realtors. "In our business, data integrity is paramount. Windows NT allows us to guarantee complete customer privacy, as only agents with a need to know can access customer information—even on our shared PCs."

Windows NT is not complicated. Windows NT features the same familiar user interface that is in the Windows 95 operating system. "The Windows NT user interface makes everything easy," says Leoung O'Young of Digimata. "We just finished a project that, just a few years ago, we couldn't have even attempted. But now that we have a Digital Personal Workstation running

Windows NT, we can take on big projects and really deliver." Jan Denson of Pillsbury Madison Sutro LLT agrees, having recently migrated the firm to a Dell OptiPlex PC and Windows NT environment. "It hasn't been hard at all to learn Windows NT—and we've got people here who, five hours before they got their system, didn't even know what a mouse was. A little bit of training, and they're up and running. That's how easy Windows NT is."

Windows NT is a multitasking wonder. What about doing multiple tasks at once? Windows NT preemptive multitasking allows you to work fast and furiously in several applications at the same time without worrying about overloading the system. "Windows NT task switching is ... bam! It's immediate," says Loe. "Windows NT runs every application in a separate memory space, so it's like having a virtual machine for each task."

Windows NT turns you into a brilliant manager of files, folders, applications—and time. Hate filing? That's okay. Windows NT presents a view of information that makes browsing and managing files, drives, and network connections easy—and your time even more productive. "We're able to get more work done in less time; we know the status of everything. And with our Digital Personal Workstation, the 3-D work really screams," says Arabian, owner of Hypnotic Fx.

Yes! Windows NT Workstation is right for businesses of *all* sizes.

Windows NT saves big bucks. Industry analysts report that running Windows NT costs a lot less than running Windows 3.1.* And don't forget the time saved by not calling technical support and how much more work your firm can accomplish—and bill—due to increased productivity. "When you consider the return on investment," adds Loe, "you've really got to ask yourself, can I afford not to go with Windows NT?"

Windows NT is the best way to move your business into the future: a 32-bit world. Besides increased security, better performance, bulletproof reliability, and reduced costs, what else can a 32-bit operating system like Windows NT offer? Well, how about the satisfaction of a secure investment? As Denson points out, "We did the research, and it was clear to us that 32-bit was the only way to go. This was a strategic decision—our goal was to buy on the forward edge of technology." What did their research tell them? "All indicators pointed to a 32-bit environment running Windows NT."

Windows NT has a way of helping businesses of all sizes accomplish one important task: success. "It's funny," summarizes Arabian. "A lot of people think Windows NT is just for large businesses, but I think it's actually the other way around. Windows NT is the way in. Being successful has little to do with size and everything to do with how quickly you move. And I can tell you this much: With Windows NT, we're moving pretty fast."

---

*Gartner Group, 1996; Forrester, 1997

From our partners

Dell: built for your business. At Dell, we talk with thousands of business customers every day, and this is what we've heard. You want a powerful machine that won't become obsolete within a year (or even five). You want it configured for your specific needs. And you want it at a fair price. How do we respond to these requests? With one word: OptiPlex.

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Digital: approaching warp speed. At Digital, we see a tremendous opportunity for businesses of all sizes to sharpen their competitive edge by moving to powerful Windows NT–based workstations. Built for the demanding design professional, our Digital Personal Workstations can drive down costs, improve productivity, and help you harness the latest, most innovative 32-bit applications. And the results are impressive.

digital

Digital Personal Workstations unleash the true power of Windows NT Workstation to help users visualize their creations faster and more realistically. At the same time, they offer access to state-of-the-art office and personal productivity tools. It all adds up to faster time to market. Even better, the combination of Digital Personal Workstations and Windows NT offers a total cost of ownership that is 39 percent lower than that of UNIX workstations, according to a study conducted by Deloitte and Touche. See what we mean? Impressive results. And exactly what you would expect from a powerful alliance between two market leaders: Digital and Microsoft.

For more information on Microsoft's partnership approach to Windows NT business computing, visit: www.microsoft.com/windows/newtech/

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Today, while all our ThinkPads run Windows NT, the IBM ThinkPad 770 provides what we believe is the industry's premier Windows NT Workstation implementation in a mobile platform. Every ThinkPad 770 features, among other things, full power management, Ultrabay Plug and Play, and hot plug PC Card support. Bottom line? Our customers can take advantage of Windows NT security, scalability, and reliability at 35,000 feet as easily as they can on their desktop system back at the office. Flexibility through partnership. At IBM and Microsoft, it's what we think small businesses need to succeed.

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Briefs

E-MAIL EXPLOSION

Worldwide E-mail software revenue is projected to grow from $1.4 billion this year to $2.1 billion by 2001.

Source: International Data Corp., Framingham, Mass.

[illegible]

Polaroid 'net strengthens business links

By Bob Wallace

POLAROID CORP. is using its sophisticated mesh of networks to support its technologically demanding users and to create a path to large customers and suppliers.

The company is building an expansive extranet that gives suppliers limited access to its databases and makes 40% of its U.S. sales over an electronic data interchange (EDI) service.

"We use the extranet to build new or better relationships with some business partners and suppliers by providing them access to our inventory control database," said George Deyett, telecommunications operations manager at Polaroid in Waltham, Mass. "It gives them access to information they need without opening up our entire network to them."

ELECTRONIC COMMERCE

Polaroid has used EDI for two years and has connections to many major customers, including Wal-Mart Stores, Inc. Deyett said he is considering running EDI over the Internet to make electronic connections simpler.

But the extranet wouldn't be possible without a solid WAN/LAN foundation that includes wide-area network segments in eastern Massachusetts, a domestic network and an international network.

"The [WAN] also enables us to better support our workforce, which is rapidly becoming more mobile," Deyett said. "We have many small remote sites. Some are networked, and some still aren't. Supporting them is a big project."

Polaroid was among the first to use Nynex Corp.'s Fiber Distributed Data Interface service. The service lets sites more quickly transmit bandwidth-intensive computer-aided design files between locations, Deyett said.

The system lets Polaroid link LANs at sites throughout eastern Massachusetts at 100M bit/sec., which means bandwidth doesn't drop after data leaves the campus network.

Polaroid needs the high-speed connections for applications such as videoconferencing, which helps far-flung sites

Polaroid, page 56

No early payoff from Cisco/Microsoft pact

There [illegible] fantastic [illegible]
and both companie[illegible]
resourc[illegible] really [illegible]
standards

▸ *Alliance shows promise, benefits are year off*

By Laura DiDio

THE RECENT expansion of a six-month alliance between Microsoft Corp. and Cisco Systems, Inc. continues a long-standing trend of high-profile technology pacts among networking vendors. But the success of these alliances often is iffy at best.

Microsoft at its Professional Developers Conference last month announced an alliance with Cisco, with support from 20 other vendors.

Under the alliance, the two plan to develop a specification that would let Microsoft's upcoming Windows NT 5.0 Active Directory manage applications, users, network devices and services.

Jim Allchin, vice president of Microsoft's personal and business systems group, said the alliance will give businesses a unified mechanism to administer all network components and users — thereby reducing the staff and applications needed to manage large networks.

The spec will provide a standard scheme for collecting, storing and exposing network status information. Allchin said the deal complements the Desktop Management Task Force's (DMTF) Common Information Model spec and uses the Lightweight Directory Access Proto-

Cisco/Microsoft, page 56

MANAGEMENT SOFTWARE

Platinum integrates tools

By Patrick Dryden

USERS OF DATABASE and systems management software from Platinum Technology, Inc. are relieved that the vendor's diverse tools are finally starting to work together.

Platinum, in Oakbrook Terrace, Ill., this week will release upgraded versions of nine point products that for the first time will run on Windows NT and will include a common interface and services.

The interface enables a few of Platinum's widely used tools to work together as an integrated suite called ProVision. Users may be able to save the hassle of forging links themselves. An operator can pick among the tools to apply a mix of management functions through a common console, information repository and set of alerts.

Information system managers can upgrade or adopt Platinum tools that can be linked as needed, instead of embracing a huge framework from competitors such as Hewlett-Packard Co., Tivoli Systems, Inc. and Computer Associates International, Inc. The goal is the same — reduce the cost and risk of maintaining distributed client/server applications.

ProVision speeds response to problems by integrating alerts and fixes in one console

Platinum, page 56

MCI guarantees data service

▸ *Monthly fee rebate offered to large companies*

By Matt Hamblen

MCI COMMUNICATIONS CORP. has announced guaranteed door-to-door Synchronous Optical Network (Sonet)-based data service for large companies in 22 metropolitan areas. MCI Broadband Connections service, which combines MCI's long-distance network with new MCI local facilities, will let the carrier provide standard service guarantees that analysts said are unique in the industry.

If a customer's network fails for more than one minute in a given month, MCI will rebate half the monthly fee; if the service is out for more than an hour, MCI will rebate a full month's fee, officials said.

Also, MCI will guarantee to hook customers up to the service on a certain date. If service isn't connected by 30 days after that date, a customer will receive a refund equal to double the presubscription fee. That fee could be $20,000 for setting up T3 services, making the refund worth $40,000.

Analysts said the guarantees are part of a recent trend among telecommunications companies, which are turning service-level agreements designed for valued individual customers into standard commercial offerings. Users should expect to see guarantees become more common as the network service industry gets more competitive, analysts said.

"This service is for companies obsessed with two things: ultrahigh speed and ultrahigh reliability," said Mike Smith, an analyst at Probe Research, Inc. in Cedar Knolls, N.J.

MCI, in Washington, couldn't identify potential customers, but Smith said there might be a pool of only 100 to 200 large companies willing to spend tens of thousands of dollars per month on the service "The potential pool of customers is fairly limited, but it's not an insignificant offering," he said.

The guaranteed service will cost about 15% more than monthly costs for existing, nonguaranteed service, MCI officials said. As an example, officials said a Sonet T3 guaranteed connection will cost $42,412 per month from New York to Chicago, about 12% more than the service currently available.

MCI Broadband Connections makes data connections at 45M to 155 M bit/sec. It is based on installations of fiber facilities in major cities and is directly connected to more than 8,000 buildings so far.

Sonet is a transmission protocol that dictates transmissions of data across fiber-optic cable. It can combine voice, data and video transmissions on a single channel. ☐

Polaroid extranet

CONTINUED FROM PAGE 55

share and collaborate on product drawings before parts are manufactured. "We need them to all be on the same page," Deyett said. The firm also has a six-site 45M-bit/sec T3 network in Massachusetts.

> **"We use the extranet to build new or better relationships with some business partners and suppliers by providing them access to our inventory control database."**
> **– George Deyett, Polaroid**

Deyett is considering consolidating those two WANs and a third, which runs at 1.544M bit/sec T1, into a Synchronous Optical Network (Sonet) in the U.S. Even after the cost of new equipment, aggregating the traffic would save money, he said. He wouldn't mention specifics.

Deyett has his hands full managing the network, which continues to grow as the number of users of sophisticated networked applications — including videoconferencing and SAP AG's R/3 — has grown.

"We've gone to two data drops per office, and that happened over a short time, too, like three to five years," said Ron Hill, an information management analyst at Polaroid. "When I first started as an electrician many years ago, everybody was on the same wire. So if one person went down, everyone did. The network's come a long way."

Deyett is challenged by the mass of projects, but it isn't unusual at major companies, analysts said.

"[A WAN manager] has to be able to juggle several important and often diverse projects at once without any one suffering," said Daniel Briere, president of TeleChoice, Inc., a consultancy in Verona, N.J.

"And global companies typically have a spider's web of different WAN lines to monitor and manage," he said. ☐

Platinum integrates tools in ProVision

CONTINUED FROM PAGE 55

"ProVision promises quicker response, more convenience and less duplication of effort," said Platinum user Mike Mueller, a senior systems analyst at Northwestern Mutual Life Insurance Co. in Milwaukee.

The systems administrators and database administrators who care for 30 Unix servers at Northwestern will see the same alarms and share automated responses, not work in isolated consoles, Mueller said.

Lack of integration bothered Jerry Burgen, systems and database administrator at E and L Transport Co. in Wayne, Mich. Burgen said Platinum could offer only a developer's kit to help him link six tools his company had acquired.

"Now I look forward to putting aside my handwritten scripts to let my Platinum tools talk to each other," Burgen said.

Users said they want all their chosen tools to work together as soon as possible. But Platinum has more than 100 point products; only a dozen will offer ProVision integration by year's end. Even so, delivery of the Platinum Open Enterprise Management Services technology promised two years ago has encouraged users to extend their fledgling suites. "I'm not in love with Platinum to the point that they're the only vendor I'd evaluate, but now I would tend to look there first," Mueller said.

MidFirst Bank in Oklahoma City, runs only the AutoSys job scheduler from Platinum, but it hopes to add four more tools to start building an enterprise management suite, said Collin Douglas, Unix systems administrator at the bank.

"Integration was their only weak point compared with alternatives like [CA's] Unicenter TNG and [Tivoli's] TME 10," Douglas said.

> **"I look forward to putting aside my handwritten scripts to let my Platinum tools talk to each other."**
> **– Jerry Burgen, E and L Transport**

The ProVision option should trigger sales in the huge base of Platinum users, but Platinum faces significant competition from framework players CA, HP and Tivoli, said Herb VanHook, an analyst at Meta Group, Inc. in Westport, Conn.

Platinum users should adopt the free ProVision upgrades to benefit from the common interface and infrastructure, VanHook said. But Platinum will struggle against the entrenched vendors because of ProVision's functional weaknesses, such as the lack of network and inventory management, he said. ☐

NEW PRODUCT

D-LINK SYSTEMS, INC. has announced the DES-1008, an eight-port Ethernet switch for mixed 10M and 100M-bit/sec. networks.

According to the Irvine, Calif., company, each port supports N-way autonegotiation. The feature detects transmission speeds and full- or half-duplex signaling for each attached device. That enables the switch to automatically configure each port to the highest supported speed.

The switch costs $1,995.

D-Link Systems
(714) 455-1688
www.dlink.com

Cisco/Microsoft pact

CONTINUED FROM PAGE 55

col to facilitate the exchange of data over wide-area networks. Cisco will incorporate its network routers and its Internetworking Operating System services into the draft specification.

"There are fantastic synergies, and both companies have the resources to really promote standards for directory-enabled networks," said Mike Sidell, senior business manager of business systems at the Electronic Brokerage division of Charles Schwab & Co. in San Francisco. "Still, the Active Directory is a year away from shipping. So who knows whether standard will become reality or remain a fantasy."

According to Bob Sakakeeny, an analyst at Aberdeen Group, Inc. in Boston, "Some alliances succeed; many are pure hype designed to freeze the market."

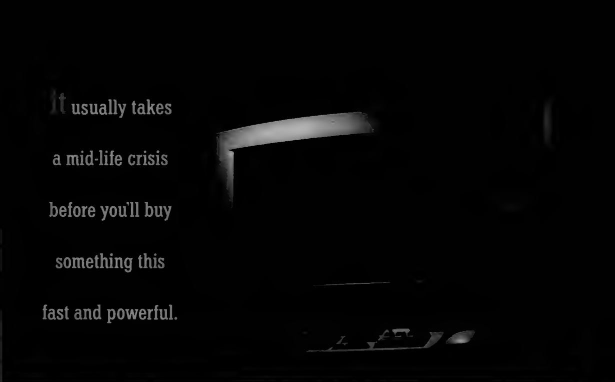
In general, analysts and users said, most alliances never make it beyond the hype stage. A recent example of a successful alliance, is Sun Microsystems, Inc. getting vendors to support its Java programming language.

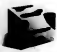
By contrast, 3Com Corp.'s attempt in late 1994 to forge a technology alliance is generally regarded as a flop. 3Com had attempted to enter into a pact with multiple vendors to promote Priority Access Control Enabled technology to run multimedia video over Ethernet networks. In the case of the Microsoft/Cisco pact, seeing is believing.

"It sounds great, but at this stage, I don't take it too seriously. The alliance is based on the Active Directory that doesn't exist and won't for at least a year. I'm also skeptical because Microsoft never supported any DMTF initiatives before this," said Matt Rice, senior network manager at USTrust Bank in Cambridge, Mass.

Eric Hindin, an analyst at The Yankee Group in Boston, agreed.

"Alliances are useful in defining the direction products need to take and to create awareness to solve issues. But Microsoft's idea of a partnership isn't democratic. They create something and expect everyone else to support them," he said. ☐





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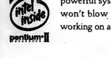

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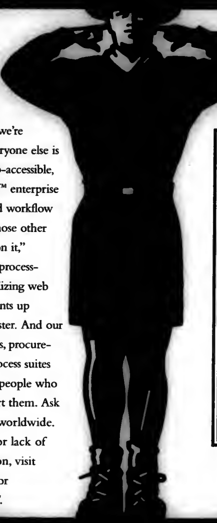

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Briefs

Data warehouse priorities

What kind of data warehousing software do you plan to buy in the next 12 to 18 months?

Internet-enabled data access tools	56%
Data warehouse management software	49%
Query and reporting tools	47%
Data warehouse design tools	40%
Data extraction software	39%
Data loading and delivery tools	37%
Data mining products	33%

Base: 2,100 data warehousing sites in North America; multiple responses allowed

Source: Meta Group, Inc., Stamford, Conn.

[illegible]

Bundled office apps sweeten NC offer

By April Jacobs

USERS AND ANALYSTS are calling Network Computer, Inc.'s (NCI) decision to bundle StarOffice — a Microsoft Corp. Office-like productivity suite — with its NC server software a big step forward for network computers.

NCI, based in Redwood Shores, Calif., is a spin-off of Oracle Corp. that makes server software for network computers. The company said it will bundle the suite of office productivity applications from Star Division GmbH in Hamburg, Germany [CW, Oct. 6].

"There's no question that access to more applications would broaden how network computers could be deployed," said Hugh Allen, director of information technology at Dunlop Tire Co. in Amherst, N.Y.

Allen said Dunlop plans to deploy network computers to many of its 2,000 users because only two out of 10 need a "robust PC" to do their desktop work.

"Right now, though, we would be using network computers for our intranet-based applications or for users running only a single application, but that's because there aren't many choices in terms of applications for NCs," Allen said.

StarOffice 4.0 suite will give users of Oracle's NC the following features:

- Word processing
- Spreadsheet and database functionality
- Internet access and E-mail

MICHAEL GREENLAR

Allen's opinion was echoed by other network computer-minded end users and industry analysts.

BIG STEP

"This is a very important step forward for Oracle and network computers," said Anne Thomas, an analyst at Patricia Seybold Group in Boston. She said there are few competitors currently in the market.

NCI licensed StarOffice from Star Division, the No. 2 supplier of corporate software in Europe.

Roger Kay, an analyst at International Data Corp. in Fram-

Bundled apps, page 62

• IT revamp designed to improve service

Nike Japan remakes order system

NIKE JAPAN

- 1997 revenue: $613.5 million*
- Gr[illegible]th rate: 93%
- [illegible]n is the second-[illegible] growth market for [illegible], second to the U.S.
- [illegible] accounts for half of Nike's Asia-Pacific business

*Fiscal year, which ended May 31

By Randy Weston

NIKE — the word invokes images of double-digit growth, a corporate logo recognized worldwide and the best athletes in the world clamoring to be representatives.

But for Nike Japan Corp., keeping up with the image is a struggle. Sales in Japan are going through the roof while an aging Fujitsu Ltd. 8480 mainframe that runs a custom order-entry system lags behind.

"These are great problems to have," said Michael Della Ratta, director of logistic support at Nike Japan. "Unfortunately, this computer system we have is not of much use unless it ties in with improving the customer's life [and] how they can relate to Nike."

So Nike Japan, the Tokyo-based subsidiary of Nike, Inc. in Beaverton, Ore., set out to revamp its entire order-entry system to create some uniformity in its customer relations. The project includes installing System ESS order-management software from Industri-Matematik International Corp. in Tarrytown, N.Y. The entire project, including hardware and licensing fees, is budgeted at between $15 million and $20 million. It is scheduled to go live in June.

STIFF COMPETITION

Della Ratta said competitors in the Japanese market — companies such as Asics Corp. and Mizuno Corp. — set the service standard and pressure Nike's information systems people and equipment to keep pace. "They are quite customer-oriented, and keeping up can sometimes lead you down a path that can be very demanding on your

Nike Japan, page 62

Sun unveils new server family member

By Cheri Paquet

Aiming to reduce network downtime, Sun Microsystems, Inc. last week announced Sun Enterprise Cluster, the latest addition to its Enterprise Server family.

The product sustains a four-node cluster and maintains up to 256 processors with 256G bytes of memory and 12.8G byte/sec. of I/O bandwidth. The Sun Enterprise Cluster includes Sun Cluster 2.0 software, which features fail-over and parallel database capabilities. The software comes with a high-speed, low-latency cluster interconnect that supports four nodes and has an adapter card, a switch and cables.

The product is available this month. Prices start at $2,000 for the software and the Sun NFS agent.

Paquet is a correspondent at the IDG News Service in San Francisco.

Nike Japan revamps system

CONTINUED FROM PAGE 61

computer system and customer service group," be said.

With the new system, Nike Japan's order-entry and customer service processes are guided by the company's specified business rules and decision-support mechanisms in the software.

"The custom [mainframe] system has no rules, so if you get a good customer service agent, you get good service" from Nike, Della Ratta said. "But if you get someone who is junior or someone who is having a bad day, you get bad service. But with the new customer service package, there are rules to guide the process so you get uniform service."

CUSTOMER EDUCATION

The system also means educating customers on a new way of doing business. Most of Nike Japan's customers, mainly retailers and wholesellers, place orders on demand instead of forecasting or using shipping windows. So Nike is trying to change that by using the system to help its customers forecast needs six months ahead. The forecasting is being done with a custom system built by Nike for all its operations.

"It's really a new learning [experience] for a lot of customers," Della Ratta said. "It's about making them more like a partner than just someone who can demand a product today."

Greg Girard, an analyst at Advanced Manufacturing Research, Inc. in Boston, said although improving the demand end of the process is a worthy endeavor, it should go hand-in-hand with improvements in supply-chain management."

"There is a lot of supply-chain opportunity driven by forecasting," Girard said. "You can't get it all by execution. You need to get a good portion of it through improved forecasting and demand planning."

Once Nike Japan has the project in place — from execution of its new software system to better forecasting its needs — Della Ratta said the company should be able to more efficiently get the nearly one million pairs of Air Jordan basketball shoes bought each month to stores across Japan. □

Bundled apps

CONTINUED FROM PAGE 61

ingham, Mass., said access to more PC-like applications will help network computers gain a wider audience. But the jury on network computers is still out.

"Using a Windows base, this may be one more brick in the edifice needed to make the NCI environment viable, but it doesn't answer longer-term questions like whether it will be occupied by many users. It doesn't guarantee a passing grade," Kay said.

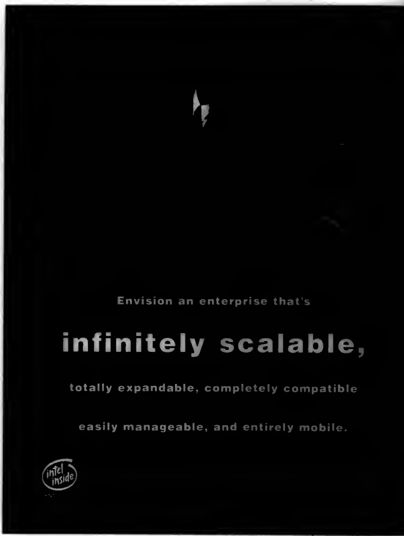
WAIT-AND-SEE APPROACH

Bruce Benham, chief information officer at RE/MAX International, Inc. in Englewood, Colo., said he is passing on any network computer adoption plans until they become more widely accepted. Network computer models are still so new that reliable market statistics aren't yet available.

Benham said the availability of more applications and improved functionality could make network computers more attractive in a few years. He said much of his hesitation is based on the fact that they still appear to be limited in functionality.

The StarOffice 4.0 suite provides users with standard productivity application features, such as electronic mail, word processing, spreadsheet and database access. Users of StarOffice can also link their documents to Microsoft documents by saving them in a similar format or as Hypertext Markup Language-based documents to be posted to the World Wide Web if necessary.

Bundling and pricing information for the software suite wasn't yet available. □



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BOOK REVIEW

Guide shows way to Visual Basic, SQL

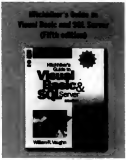
Hitchhiker's Guide to Visual Basic and SQL Server (Fifth edition)

By William R. Vaughn; Microsoft Press, Redmond, Wash.; $49.99, 816 pages with CD-ROM. ISBN: 1572315679

This tome covers the use of Microsoft Corp.'s Visual Basic 5.0 to design, code, debug and tune SQL Server 6.5 applications. All the expected topics are in there: Open Database Connectivity, the Data Access Object interface, Jet database, Visual Basic library and many other extraordinarily technical topics that will make a programmer happy.

But there are nice surprises, too. Vaughn, who works at Microsoft as a Visual Basic product manager, takes the reader on an insider's journey through the evolution of Visual Basic 5.0 and what's new from Version 4.0. Surprisingly, he talks about Visual Basic 5.0's 32-bit bias and how it won't deal with the 16-bit world, as well as the diverse and often confusing ways Visual Basic can access data. Perhaps not so surprisingly, Vaughn defends its speed, especially compared with C++, and talks about its ease of use.

The author also explains why he chose not to cover much in the book about how to use the Visual Basic/SQL Server combo to develop Internet applications. "Corporate America is not completely convinced that it's ready to give up its private LAN limousines in favor of public transportation for its data," Vaughn writes. So he is saving that discussion for the next edition of the book, assuming one is forthcoming. It makes one wonder what that other Bill in Redmond might think.


Hitchhiker's Guide to Visual Basic and SQL Server (Fifth edition)

The first two sections of the book are devoted mostly to explaining the basics of client/server data access, architecture and application design. There is even a chapter about Vaughn's suggestions for the basic configuration of a Visual Basic 5.0 development workstation — a 66-MHz 486 machine with a minimum of 12M bytes of memory.

— *Johanna Ambrosio*

NEW PRODUCT

QUARTERDECK CORP. has announced TuneUp, Windows 95-based software that automates application updates over the Internet.

According to the Marina Del Rey, Calif., company, the software profiles the software and hardware on a PC and gives the user a list of the latest updates or bug fixes posted on vendor World Wide Web sites. The user can select the desired updates, and TuneUp downloads them.

TuneUp costs $39.

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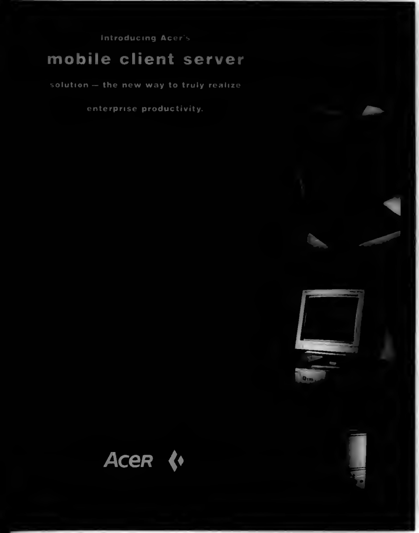

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Briefs

MAINFRAME BITS

- The mainframe market will hover around $21 billion with little dramatic growth this year
- Processor prices will break $10,000 per MIPS this year
- Up to 80% of mainframes IBM shipped last year had newer, CMOS processors
- Mainframe product cycles have dropped from 4 years to 12 to 18 months

Source: Aberdeen Group, Inc., Boston

NEC gets lighter

NEC Computer Systems Division in Mountain View, Calif., has introduced the Versa 5000 series of slim, light business notebooks. The devices weigh 4.9 pounds, have a 13.3-in. screen and are 1.5-in. thick. They come with a 1.6G-, 2.1G- or 3.2G-byte hard drive and 166-MHz Pentium processor with MMX technology. The machines are available now. Pricing ranges from $2,499 to $3,599.

Mega storage

Symbios Logic, Inc. in Fort Collins, Colo., this week will announce its MetaStor disk systems. MetaStor is based on a modular design that will let users change connection options and expand their disk systems from the same building blocks. Storage capacity can range from 8G bytes up to multiterabyte systems. MetaStor systems will ship next month.

[illegible] on tap

[illegible] last week announced [illegible] of its [illegible] a low-end server that runs a mainframe CMOS processor and the [illegible] operating system. The models boast the performance of [illegible] higher- and two- and five-way models. The internal storage capacity of entry-level machines was doubled to [illegible] bytes.

N.J. reels in scofflaws

A New Jersey police officer checks a parking violations database on his handheld device

By Kim Girard

PARK YOUR CAR illegally in New Jersey these days and chances are much higher than before that you will be forced to pay the ticket — and own up to any other pending traffic violations you may have incurred.

A new statewide wireless network connects parking enforcement officers statewide to a central database in Trenton. The officers use handheld computers to access information in the database.

HANDHELD COMPUTERS

The system has increased by half the collection rate on the 3.5 million tickets issued annually in New Jersey.

State officials credit the ticketing system with increasing revenue by eliminating much of the human error in the ticketing process. The system connects the state's 538 courts directly to records at the state's Department of Motor Vehicles (DMV).

"Before, a lot of fines never got collected. The volume was just too great," said Bob Jacobson, project manager in the IS division at the New Jersey Administrative Office of the Courts. "Now, the collection rate is up to 90%."

It is becoming more common for police to use portable computers and wireless connections to dip in to criminal record databases from the field, but most still track parking tickets manually or by

Traffic, page 70

Big iron morphs into mainstream servers

By Tim Ouellette

THE MAINFRAME has gone incognito.

Instead of physically dominating the computer room these days, mainframe hardware vendors — makers of IBM S/390s and compatibles — are doing their best to make big iron look and act like just another big server.

Users have responded by pouring more power and computing loads than ever on the machines, turning the mainframe into a central clearinghouse for a company's computing (see chart).

CLOSER LOOK

Mainframe update

Today, the boxes are smaller, the chillers (what some users called walk-in freezers) are gone and the operating system now supports Unix, Windows NT, Java and connections to the World Wide Web.

"Now our SP Unix box is bigger than our mainframe. We don't even call it the mainframe any more, we call it the main server," said Bob Rothenberger, assistant director of computer operations at Provident Mutual Life in Berwyn, Pa.

IBM doesn't call it a mainframe anymore, either. Its S/390 systems are now "enterprise servers." And when DataPro, Inc. conducted its mainframe user survey this year, it included high-end Unix server shops in the mix.

"Mainframe is an ambiguous terms these days. To us, it means the largest centrally managed computer used to run their business," said Ed Cowger, a senior analyst at DataPro in Delran, N.J.

But the benefits users see in retaining mainframe systems aren't ambiguous.

So even though users are also moving some processing off their mainframe systems to high-end Unix offerings, users say the sheer power, security and reliability found on the mainframe makes it a central requirement in enterprise computing.

"We are putting up Unix servers to run some packaged applications, but we are not talking about moving what's on the mainframe," said Julie Bonner, a senior programmer at Texas' Department of Mental Health in Austin.

Big iron, page 71

MAINFRAME NUMBER-CRUNCHING

Average number of users supported by mainframe	1,239
Average mainframe-related budget expenditures for 1997	$2.3M
Mainframe sites planning to add capacity	39%
Mainframe sites off-loading some processing to Unix and Windows NT	57%

Base: 421 mainframe shops

Source: DataPro, Delran, N.J.

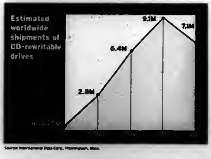
CD-rewritable drives take leap forward

By Nancy Dillon

NEW COMPACT DISC-rewritable (CD-RW) drives let users not only store data on CD media, but also erase and rewrite data repeatedly on the same disc.

That's exciting news for Bob Johnson, an engineer at New York-based real estate firm Cushman & Wakefield, Inc. From Cushman's Seattle office, Johnson buys information technology supplies for 200 users in the firm's Western region and helps set national standards

CD-RW drives, page 70



Estimated worldwide shipments of CD-rewritable drives

Source: International Data Corp., Framingham, Mass.

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Traffic scofflaws

CONTINUED FROM PAGE 67

municipality. New Jersey installed its statewide tracking system by using a portion of the parking fines collected to pay for the $1.5 million in hardware and network costs.

UNUSUAL APPROACH

New Jersey's approach to ticketing is unique, said Mike Humphrey, a business director at Public Technology, Inc., a Washington-based technology consultancy to municipalities.

Many towns separately automate their ticketing systems. By contrast, a statewide system simplifies information sharing among courts, the parking department and the DMV, he said.

Instead of writing out tickets with pen and paper, New Jersey parking enforcement officers now enter vehicle and violation information on a rugged handheld device, the two-pound PPT 4600 from Symbol Technologies, Inc in Holtsville, N.Y. Information is automatically downloaded to the courts' IBM 3090 mainframe

The pen-based handhelds have 2M bytes of memory and a 2-1/2-pound printer attached for printing tickets.

The devices connect to the data center via an Ericsson, Inc wireless modem that works on a wireless network from RAM Mobile Data USA in Woodbridge, N.J.

All street and road names are stored on a database, customized by municipality. Officers fill in most of the data by choosing from a field of entries, so bad handwriting and wrong information no longer causes 10% to 15% of all tickets to be discarded as illegible

Jacobson said battery life was an initial problem with the handhelds. Law enforcement officials wanted eight-hour life from the lithium battery, they have settled for 6 1/2 hours. ☐

CD-RW drives

CONTINUED FROM PAGE 67

for 2,000 of the company's U.S. employees.

"With only write-once CDs, I have stacks of outdated sales and marketing discs on my desk that I have to break and throw away for confidentiality purposes," Johnson said.

He said his company has spent thousands of dollars on CD-recordable media this year alone. "My accounting people will be happy to move to rewritable discs," he said.

MAJOR BUY

Six CD-RW drives from Palo Alto, Calif.-based Hewlett-Packard Co. are on order for Johnson's Northwestern region. Once those drives have been tested, Johnson said, he plans to push for several hundred more for offices across the U.S.

HP announced its first rewritable drive, the SureStore CD-Writer Plus, a few weeks ago. The internal version costs $499, and the external version costs $610. A CD-RW disc from HP holds 650M bytes of data and costs $32. (A CD with record-once capability costs about $4.)

Other CD-RW drives in the $500 to $700 range recently were announced by Yamaha Systems Technology, Inc. in San Jose, Calif., and Philips Electronics NV in Eindhoven, Netherlands.

Dave Sebald, an information technology manager at Teledyne Water Pik in Fort Collins, Colo., said his company is looking for alternatives to desktop tape storage, and CD-RW drives are a possibility.

Teledyne is an international supplier of oral health and water filtration products.

"I'm glad to see rewritable CD storage reaching critical mass. I like the concept," Sebald said. "But we're not going to go out and buy the drives until we see how well the technology is received in the marketplace. Speed is also an issue for us." ☐

Big iron morphs into mainstream servers

CONTINUED FROM PAGE 67

The department tracks its clients with a mainframe database called Model 204 from Computer Corporation of America in Framingham, Mass. "We want the mainframe to have strong central tracking, and then we can spool the critical data out to other packages," Bonner said.

Driving all this are the continued gains in mainframe processing power:

- IBM recently announced its 63-MIPS CMOS processors and is upgrading its parallel sysplex mainframe clustering scheme.
- Amdahl Corp. in Sunnyvale, Calif., has a three-year plan to crank up its processors to 150 MIPS.
- Hitachi Data Systems Corp. in Santa Clara, Calif., continues to win on the high end with its Skyline processors, slated to reach 150 MIPS late this year.

In fact, new single-CPU Skyline models perform more reliably than the multi-CPU CMOS offerings from IBM and HDS, according to recent research by Meta Group, Inc. in Stamford, Conn.

Because the mainframe takes on heavy workloads and is in a central position in business computing, software plays a more important role in helping users automate and manage those responsibilities.

For example, The Royal Bank of Canada in Toronto relies on the mainframe to provide the infrastructure to its companywide data warehouse, while smaller servers manage local data marts.

The bank uses Platinum Technology, Inc.'s Repository/MVS, a mainframe inventory system, to help users track where data elements came from and make sure all data changes are spread throughout the warehouse.

CONFIDENCE-BUILDER

"Having the warehouse backed by the mainframe and mainframe software gives users confidence in the data warehouse data," said Mohammad Rifaie manager of data management at the bank. "If you don't trust the data, you will be hesitant to use it."

At Florida's Department of Labor in Tallahassee, the mainframe still runs several hundred jobs per month that have to be properly scheduled and the interactions among them tracked.

Cynthia Goodman, systems project administrator, uses Beta Systems, Inc.'s scheduling software to automate the process.

That lets the mainframe, with all its recent improvements, remain in the background and go nearly unnoticed while still being at the center of enterprise computing. "The mainframe is getting closer and closer to being a lights-out operation," Goodman said. □

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SHORT

Intel I960 chips

Intel Corp. recently said about a dozen companies intend to ship servers with I2O technology and Intel's I960 I/O processors. The technology works by off-loading some I/O functions of the processor to the I/O subsystem. That improves performance and scalability, Intel officials said.

Among the server vendors that have signed on to this technology and plan to release servers over the coming months are Compaq Computer Corp., Dell Computer Corp., Gateway 2000, Inc., Hewlett-Packard Co., IBM and Micron Electronics, Inc. in Nampa, Idaho.

a l

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A different Microsoft? Microsoft can maintain its growth rate in only one way – get into IS services, Paul Strassmann says. Page 80

QUALITY?! WHAT'S THAT?

When it comes to software quality, clueless IS managers may be their own worst enemies

ERIC MILLETTE

BY GARY H. ANTHES

IF YOU'RE NOT PART OF THE SOLUTION, YOU'RE PART OF THE PROBLEM.

Experts say software quality is poor and getting worse, and the information systems manager is to blame. Beset by budget cuts, user demands, competitive pressures and rapidly changing technology, IS managers give quality assurance a low priority, if they focus on it at all.

The result, say quality assurance specialists, are penny-wise, pound-foolish decisions that may satisfy customers and budgeteers today but ultimately serve neither group well.

Few IS managers would admit to indifference about quality, but they often emphasize testing — which is at the end of the development process — while ignoring more comprehensive and cost-effective ways to trim software defects.

Quality?!, page 76

QUALITY?!

CONTINUED FROM PAGE 75

"It's a fairly bleak picture," says quality expert Rebecca Staton-Reinstein, president of Advantage Leadership, an IS consultancy in Aventura, Fla. "IS managers' attention to QA [quality assurance] is just not there in most cases."

She ticks off the following forces that work against the quality-conscious manager:

- When mainframes gave way to other kinds of computing, tried-and-true quality' methods were made obsolete and haven't been replaced by effective new methods. "So-called 'best practices' for the client/server world are few and far between," Staton-Reinstein says.
- The recent alignment of IS managers and business unit managers isn't reflected in the attitudes of programmers and analysts, who too often fail to appreciate the business functions they ultimately support.
- Budget pressures force cutbacks in areas that foster long-term quality but that lack obvious, immediate payoffs. Outsourcing threats do the same.
- Rapid technology change and user demands pressure managers to commit to unrealistic schedules.

OOPS!

In Finland, a software error causes an automobile registration system to send 11,000 erroneous letters that threaten to de-register cars because they supposedly weren't being used. The agency later sends 11,000 letters of apology.

Lack of attention to quality is caused by "a combination of false economy and heads in the sand," Staton-Reinstein says. "And it's the feeling that we live in such a crushing marketplace that we've got to do more with less, we've got to be lean and mean — that whole mantra of modern business."

And IS managers who think they can sidestep the issue by outsourcing software development are mistaken, says William Boll, a former software quality specialist at GTE Corp. "What you have is IS managers who aren't too heavy on quality agreeing to let someone do their work who may be even less oriented toward quality."

OOPS!

A pharmaceutical company's payment system writes a $1.99 refund check using the ZIP code 98002 as the amount. The recipient cashes the check and disappears with $98,002.

Experts say IS managers too often see software quality as simply a matter of more thorough testing. "There's nothing wrong with testing, of course, but a true QA practitioner is interested in process improvement," Boll says.

That emphasis on fundamental process improvement usually is lacking at companies that produce poor software, says IS consultant Nancy Kastl, president of Kaslen Group, Inc. in Darien, Ill. Often those companies assume that good people or good technology alone will carry the day. "It's really the three together that make you successful — technology, people and process," she says.

And quality leadership should start outside IS, Kastl says. "If the company isn't under [total quality management], then IS isn't going to be, either."

OOPS!

The British National Lottery suffers a software failure that prevents identification of the winners of a 9 million-pound jackpot.

Kastl says IS managers frequently sacrifice quality needlessly to meet self-imposed schedules. "That's because it's easier to manage and measure something tangible like a date than something intangible like quality,' she says.

Ignorance, compounded by schedule pressure, is the enemy of quality, says M. E. Kabay, director of education at the National Computer Security Association in Carlisle, Pa. "Most IS managers either have not been qualified in QA, or they have been bullied by incompetent people into believing that speed is preferable to correctness," he says.

Not standing up to that bullying is "unprofessional and irresponsible," Kabay asserts, and it may expose IS managers and their companies to lawsuits.

Software developers may resist quality measures such as code and design reviews because they fear exposure of their errors, says Vicki Samuels, a senior methodology specialist at Enterprise Rent-A-Car Corp. in St. Louis. "But errors in production software are OK because you got it out on time, and we expect to have high maintenance costs. Taking extra time up front does not go over very well in a lot of places."

Several experts say the leadership attribute most lacking is courage. "It takes a very strong person to stand up and say, 'Wait a minute, we're going to have a quality product here.'" Staton-Reinstein says. "You have to tell your customers, 'Look, you guys, I know you want it yesterday, but wait until tomorrow and we'll still meet your business needs.'"

OOPS!

A computer glitch at a New York brokerage causes a half-million customer accounts to be credited with $19 million each for a brief period. At $9.975 trillion ($19 million times 525,000 accounts), it's a record for a computer error.

IS managers often resist major quality improvement programs because they fear failure and see the results as uncertain, says William E. Perry, executive director of the Quality Assurance Institute in Orlando, Fla.

They also are confused by the claims of quality groups such as his and the counter-claims of tool vendors, Perry says. "There is not a consensus in the industry about what drives down development costs," he says. "Every year, the vendors have a new miracle, and they have a lot more glamour than things like training and code inspections."

Perry advises IS managers to get formal training in quality methods and hire trained quality experts. "But not many," he says. "You only need one or two."

OOPS!

A Texas computer program scrambles people and crimes, labeling people fined for not wearing seat belts as child molesters.

Sources: Risks Forum Internet newsgroup, Seattle Post-Intelligencer, Press Association News (U.K.), National Computer Security Association

But having quality assurance people on staff doesn't guarantee quality. Too often, they get no respect, Staton-Reinstein says. "These people are often so far down the pecking order that IS managers don't listen to them," she says. "The people down in the ranks may know what to do, but they're not given the authority to do it."

In a recent survey of 55 large U.S. corporations, Rubin Systems, Inc. in Pound Ridge, N.Y., found that compensation of quality assurance specialists ranked 12th out of 14 software development job classifications.

Air Canada in Montreal used to engage in "reverse planning," in which software development schedules were forced to fit delivery dates dictated by users, leaving insufficient time for good quality assurance practices, says Richard Cox, project leader for quality assurance and production support.

Now, Cox says, Air Canada developers agree to target dates conditionally, reserving the right to revise them on completion of a design. "As problems come up, we slip the date. But we have to justify it," he says.

At The Money Store, a lending institution in Sacramento, Calif., 22 out of 400 IS people are quality assurance specialists. The Rubin survey suggests that a company of that size would typically have just two quality assurance specialists in IS.

Bob Schillato, manager of quality services, says shortchanging quality is false economy. The typical company could reduce its IS budget by 20% to 30% through readily achievable quality improvements, he says.

Making investments to improve software development processes often requires some selling, sometimes to the chief information officer by quality assurance specialists and sometimes to the CEO by the CIO. "The best way to sell quality concepts is with hard numbers," Schillato says. "If you can show them you can save eight, 10, 12 million [dollars] out of their IS budget every year, that'll get their attention."

But Schillato concedes that getting the data needed to make those kinds of arguments isn't easy and could take several years.

Cox says IS managers shouldn't be intimidated by the effort required to put in a comprehensive quality-improvement program. "Don't try to tackle the whole world at once," he advises. "Pick the problem area that will give you the best benefit and have a success story. Then go to the next area. It's amazing how that will snowball." □

Anthes is Computerworld's *senior editor, special reports.*

QUALITY: NOT A TOP PRIORITY

Executives at 55 large U.S. corporations were asked to rate the importance of the following software engineering disciplines on a scale of 1 (lowest) to 10 (highest).

Year 2000	3.8
Migrate to new platforms	3.9
Business alignment	4.0
Reduce cycle time	4.5
Recruiting	4.6
Increase productivity	4.7
Reduce costs	5.1
INCREASE SOFTWARE QUALITY	5.7
Update technology	5.8
Improve software process	6.4
Train staff in new skills	6.4
Business process re-engineering	7.0
Staff reduction	7.0
Client/server	7.4

Source: 1997 survey of 55 large corporations by Rubin Systems, Inc., Pound Ridge, N.Y.

COMPUTERWORLD

For more on IS managers and quality, set your browser this week to www.computerworld.com and listen to Rebecca Staton-Reinstein of Advantage Leadership in Aventura, Fla.

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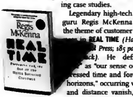
RESOURCES: IS MANAGER'S BOOKSHELF

By Leilani Allen

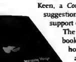
Many information systems managers are building systems that draw them closer to the customer, from call centers to customer information archives, data warehouses and extranets.

Those systems all involve gathering and analyzing information and turning it into knowledge on how to have more satisfactory and profitable customer interactions on an online, real-time basis. Several new books can help you understand the business and social trends that should be influential as you design and deploy those systems.

Start with **CUSTOMER CONNECTIONS** *by consultants Robert E. Wayland and Paul Cole (McGraw-Hill; 288 pages; $29.95, hardcover)*. Their premise, laid out in Chapters 1 and 2, is that a company's true value isn't its products or physical assets, but its portfolio of customer relationships. Those relationships can be tracked and assigned specific economic value. Chapter 3 focuses on the role technology plays in helping companies connect with customers in increasingly meaningful ways. Leave the rest of the book for the marketing department, but read the outstanding case studies.



Legendary high-tech marketing guru Regis McKenna continues the theme of customer connected- in **REAL TIME** *(Harvard Busi- l Press; 185 pages; $19.95, ck)*. He defines "real " as "our sense of ultracom essed time and foreshortened horizons," occurring when "time and distance vanish, when action and response are simultaneous." He says many companies are accelerating their internal processes, but be asserts that a far more powerful application of the real-time concept is in creating an information feedback loop — from customers and market infrastructure (including suppliers) to design and service and back out again. He then gives us a wide-ranging and entertaining tour of the real-time landscape, including implications for our social and political structures. This might be a good read for you next plane trip.



Further exploring the kno edge domain, brothers Jeremy and Tony Hope bring us **COMPETING IN THE THIRD WAVE** *(Harvard; 250 pages; $27.95, hardcover)*. The reference is to Alvin and Heidi Toffler's concept of three periods of economic evolution: the agricultural, industrial and information waves. The third-wave economy is dominated by service organizations, where the intellect of employees (knowledge workers) is the primary resource. The authors lay out 10 third-wave management issues; issues 2 and 3 (customer value and knowledge management) are particularly relevant for IS. A breezy read, the book is full of case examples. (The Hope Brothers authored the *Computerworld* Leadership series article "Crunch numbers, not people," which is available at *www.computerworld.com/leadership*.)

Taking advantage of that knowledge is the focus of Thomas M. Koulopoulos' **SMART COMPANIES, SMART TOOLS** *(Van Nostrand Reinhold; 270 pages; $29.95, hardcover)*. He outlines seven characteristics of smart companies, including structural flexibility, a focus on return on time and the use of technology.

Key technologies in support of smart companies are workflow, intranets and time-based analysis, the latter explained in most detail. The re-engineering jargon can be annoying at times, but the case studies are enlightening.

A similar theme is expounded in Peter G. W. Keen's latest book, **THE PROCESS EDGE: CREATING VALUE WHERE IT COUNTS** *(Harvard; 192 pages; $24.95 hardcover)*. He agrees that we shouldn't judge companies based on how streamlined their processes are but on how much additional economic value a given process provides. Keen, a *Computerworld* columnist, offers suggestions on improving processes to support economic value-add.

The most interesting part of the book (Chapters 8 and 9) discusses how different leadership styles and corporate cultures can organize to implement these changes. Thus, an opportunistic style has the advantage of swift movement and the willingness to discard past practices but can exhaust itself in reacting to every shift in the wind. By contrast, the sustained improvement style frequently found at industry-leading companies can be thrown for a loop when confronted with fundamental shifts in the marketplace. These sections deserve to have been developed further.

t's where transformational leaders come y. They are the people who recognize ndamental shift has occurred and take hemselves to move their firms into a way of doing business.

e focus of **THE LEADERSHIP ENGINE**, y *(with Eli Cohen) (HarperBusiness; ges; $26, hardcover)*. Organizations win if they can continually produce leaders at all levels. That requires the ability to see reality (not what it used to be or what they would like it to be) and to mobilize appropriate responses.

Most important, it requires the ability to learn and develop teachable points of view, then teach others to lead. Included are several leadership profiles of individuals who have done just that.

This book is the most valuable of the lot because it solidly confronts a vexing problem today — the lack of leaders who are willing to take their organizations through fundamental change. From Congress to the boardroom to the computer room, the qualities discussed are in short supply. If you think you've got what it takes, Tichy offers a comprehensive handbook for developing a leadership program at your workplace. ☐

Allen, a partner at Tenex, a management consulting firm in Burlington, Mass., is a Computerworld *columnist.*

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MICROSOFT AT YOUR SERVICE? COULD BE

PAUL A. STRASSMANN

Microsoft's stock price is likely to sag if the company doesn't maintain its growth rate. That will take some doing. To maintain its 1996-97 financial performance over the next 10 years, Microsoft's profits must grow a total of 9,100% to $170 billion by 2007. Meanwhile, growth in global IT spending is expected to remain at 9% per year, compounded annually. Most of that growth will be in staff and services, not packaged software, in which Microsoft is dominant.

Microsoft can't keep up its growth rate just by selling more desktop software worldwide. Only 10 countries account for 85% of worldwide IT spending, and that isn't likely to change materially. In most of those countries, particularly the U.S., year 2000-problem budget pressures and the creation of centrally controlled corporate networks will reduce the amount of money opportunity for desktop software. There's less growth available to Microsoft in this business than in the past few years.

What about raising the price of Windows NT? New editions are projected to cost twice as much as the entry-level versions. Nevertheless, at most, NT can only double Microsoft's share of the total cost of ownership from the present $180 per seat per year to $360. That isn't enough to maintain current growth, even if Microsoft's software were to control most of the clients and servers in the universe.

So far, Microsoft's accomplishments in entertainment and publishing aren't impressive. After investing hundreds of millions of dollars in ventures such as The Microsoft Network, children's software and the Expedia Travel Service, those product lines still don't contribute much to the company's profits. The payback from Microsoft's $1 billion investment in cable operator Comcast and $425 million for WebTV technology is very much in doubt.

One bellwether moneymaker for Microsoft is offering around-the-clock online support at a flat rate of $35 per problem. To keep its costs down, Microsoft has subcontracted much of its online assistance to firms in states with low labor costs. That's a good business for Microsoft, because corporate staffs won't be able to match Microsoft's superior expertise, which comes from linking its marketing, service and development organizations. But getting a piece of the desktop support business isn't enough to drive growth. It's worth only about $120 per seat per year.

MICROSOFT'S BEST BET

The most lucrative approach left for growing revenue and profits is desktop and network management services. Recently announced and widely publicized, Microsoft's Zero Administration Initiative and IntelliMirror features are an attempt to cash in as companies try to cut desktop costs.

Managing corporate desktops and networks is a lucrative business for Microsoft. The company could offer to eliminate more than half of its clients' unnecessary ownership costs through remotely executed diagnostics, preventive online maintenance, asset controls and fault-monitoring techniques. For some clients, the savings could be worth as much as $4,000 per seat per year. Microsoft could then collect a large share of those savings by real-time metering and cyberbilling of chunks of Microsoft software needed to complete any business transaction.

That's a hard strategy to execute. To carry it out, customers must institute tight network rules, install uniform desktop operating systems and enforce standards — all dictated by Microsoft. All corporate applications would become inextricably dependent on Microsoft.

Still, this omniscient, universal solution may be just what executives are looking for. CEOs and CIOs are anxious to regain control of their systems and integrate them; many companies are already taking steps to implement such a centralized approach. Executives will be attracted to Microsoft's centrist and disciplined view of how to manage information if it enables them to eliminate the chaos of their homegrown systems. Bill Gates' superb marketing engine will surely claim that Microsoft offers the only feasible way to achieve universal connectivity and enterprisewide interoperability. Only a market-dominant firm, operating under unified leadership and possessing global capabilities, can deliver that capability, they will say.

A HISTORIAN'S ADMONITION

Yet if history teaches anything, it's that universal and monolithic solutions, when imposed by a dominant authority, will ultimately fail. Corruption, rigidity, accidents or arrogance will always creep in. CIOs should be suspicious of any Microsoft claim to offer an all-encompassing solution, regardless of the immediate benefits it may offer. Nobody can predict if Microsoft can succeed where others have failed. Microsoft's quest for dominance is yet to be tested as information management evolves from an era driven by desktops to one propelled by network-centric communications.

My advice is exactly what I give to anyone who buys a home or enters into an outsourcing contract: After you move in, how costly will it be to move out? Corporate executives have finally learned that IT spending isn't merely an annual expense but a lasting and costly commitment. Questions will be asked about the ultimate costs of overdependency on a single and powerful vendor. Computer executives who are tempted to put all their faith in Microsoft ought to be ready to answer to that. □

Strassmann (paul@strassmann.com) has spent lots of money since 1961 converting information systems from one generation of technology to another. Much of that was avoidable through tight control of data and disciplined systems engineering to avoid dependency on any one vendor's products and services.

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- 41 Engineering, Scientific, R&D, Tech. Management
- 60. Sys. Integrators/VARs/Consulting Management

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- (e) Mac OS
- (f) Windows NT
- (g) Windows
- (h) NeXTStep

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65. Communications Systems/Public Utilities/Transportation
70. Mining/Construction/Petroleum/Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
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OPAL MELDS LEGACY, SQL

By David Strom

Pardon the pun, but Infresco Corp.'s Opal is a real gem of a product. It does something I think is rather unique and has some big benefits for enterprises. It's used to rapidly develop communications- and database-aware applications that are distributed across an IP network. And it enables users to access those applications via World Wide Web browsers.

Opal's heritage lies at the crossroads of three paths: It is part client/server database, part object-oriented development environment and part Web-based mainframe access. It combines those notions into a single coherent whole, something I didn't think possible before I tried it out. I'll explain how it works, but first let's look at why you need it.

If you have ever needed to integrate data from both SQL and host databases, then this is the right product for you. For example, let's say your accounts-receivable system runs on IBM VM, and you want to bring up an application that shows an aging report or who has owed you money the longest. But your system doesn't have the full contact information for your customers — that's kept in some Oracle Corp. Unix database maintained by the sales department. With Opal, you can pull the information from both places into a single graphical screen. Then just put those screens in front of your best bill collectors and let them go to work.

You also will want Opal if you need an application that takes data from your mainframe and combines it with data accessed across the Internet at one of your customers' servers. This mix-and-match approach is quite powerful.

Opal goes way beyond the notion of taking green 3270 screens and turning them into pretty Windows applications. If you have experienced High-Level Language Application Program Interface (HLLAPI) programmers on your staff, then this isn't the product for you. But if you're trying to build applications that aren't well-suited for HLLAPI - screen-scraping, such as assembling information from multiple host sources or combining mainframe and Unix data sources, then take a closer look at Opal.

Everything is just a mouse click away when you use Opal's assistant to build screens

PIECE MAKER

Opal comes in several pieces: Opal Integrator, the tool you use to build, test and run applications; Opal Player, which is just for running applications; and Opal Server, which ideally should reside on the same machine as your database servers. Infresco, a subsidiary of Computer Associates International, Inc., delivers Opal with a copy of CA's Open Ingres, but you don't need it if you already have your own database server.

The products all run on Windows 95 and Windows NT, although we just tested them on NT Workstation Version 4. Finally, there are 32-bit Windows-based plug-ins for Netscape Communications Corp. Navigator that can view and interact with Opal applications.

The company promises Windows 3.1 support and an ActiveX control for Microsoft Corp.'s Internet Explorer soon.

The way that Opal makes its database connections is quite clever. Unlike other client/server tools, you don't need a separate copy of Open Database Connectivity (ODBC) running on every client. What you do need is ODBC software running on the Opal server.

The server takes the information it extracts from your database and sends it over an ordinary TCP/IP connection to the client. If you ever had to deal with installing ODBC on hundreds of client computers, then you'll appreciate what Opal has done here.

That alone might be worth the price of the software. Opal also cuts down on the network chatter between your database server and clients, which is useful if you have limited bandwidth between them.

I want to say up front that I'm not a programmer. The last time I did some serious programming was back when Basic was anything but visual. Nevertheless, with a little coaching from the Opal tutorial and printed manual, I was able to cobble together a sample application in about two hours. That was impressive, given that the database I was querying was across the country on an IBM AS/400, and I had never seen its structure before. If you have developers who know their way around SQL syntax, and data structures, all the better. But even though I'm woefully ignorant about things SQL, it wasn't all that difficult.

Opal applications are called projects, which are a collection of pages or screens. Pages can be linked to particular host session screens or SQL queries and contain the usual collection of user interface elements such as scroll bars, tables, buttons and labels. Everything you do is either a right mouse click or a simple menu pick, and there is an assortment of gizmos, wizards and assistants to help you understand how to assemble the various pieces of your project.

Yes, this is a very deep product. But it is very useful for developing distributed applications. And although the list price is somewhat steep, quantity discounts are available to make Opal more affordable, according to CA. The final version is scheduled to ship later this fall. □

Strom is a reviewer in Port Washington, N.Y. He can be reached at david@strom.com.

PRODUCT REVIEW ▶

Opal Version 2.0 (beta)

Computer Associates International, Inc./Infresco Corp.
Sarasota, Fla.
(941) 952-1617 *www.infresco.com*

OVERALL **B** GRADE

PROS: It provides access to both SQL and 3270 data streams. Simple graphical screen designer.

CONS: You'll have to learn its lingo, meaning you can't use existing APIs. Price is steep.

LIST PRICE: $5,000 for server, plus $1,000 per concurrent user and $3,500 per each Integrator.

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REVIEW▸ *Novell InForms 4.2*

InForms is helpful but a handful

Application helps you automate forms-based tasks, with some effort

By Howard Millman

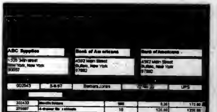
Novell, Inc.'s intelligent form design and data routing application delivers routine and secure documents at lightning speed, automating tasks that once took the mailroom hours and sometimes days to accomplish.

InForms 4.2 provides three functions. It is a comprehensive electronic forms designer, a powerful front end that provides access to multiplatform databases and an intelligent rules-based document transport. It was designed to reduce the flow of paper forms and their associated ills such as handling and filing costs. It can also expose data buried deep in corporate databases for use in decision support.

Based on my tests, the package is well-suited for use by experienced, high-end forms developers. Newbie developers could build stand-alone forms with some effort and agony, but they would be better off using less sophisticated and lower-cost products, including Caere Corp.'s $200 OmniForm.

InForms' two core components are Designer and Filler. Designer allows you to create simple stand-alone forms and "smart" forms with embedded intelligence that supports, for example, dynamic routing. In addition to enabling documents to determine their destination based on current circumstances (using nested "if-then-else" logic), these advanced forms can include field, form and database links.

Filler, the end-user component, is the mechanism for entering data into the form. In Filler, developers can embed context-sensitive help, drop-down lists, automatic calculations, links to databases that will automatically fill in information and automatic database updates.



Informs will convert images into templates to simplify compliance with a corporate document appearance

NEW AND NOTABLE

Key new features and enhancements include improved performance and database access, tighter integration with Novell's GroupWise 4.x and 5.x, enhanced network security options and simplified installation.

Performance enhancements result from speedier access to back-end databases that use improved Open Database Connectivity (ODBC) drivers and native drivers, faster loading times and quicker responses to queries. Novell says that 4.2 employs nimbler versions of ODBC drivers for Corel, Inc.'s Paradox, Borland International, Inc.'s dBase, Microsoft Corp.'s FoxPro and Computer Associates International, Inc.'s Clipper and newly optimized native drivers for most popular SQL databases, such as those from Oracle Corp., Microsoft Corp. (SQL Server), Sybase, Inc., Borland (InterBase), Informix Software, Inc. and IBM (DB2). I didn't run benchmarks.

Some of the more quantifiable timesavers that I experimented with include an expanded formula editor's function pop-up list. Novell organizes the numerous formulas into categories to make them easier to locate. Some formulas aid workflow, whereas others are for calculations (arithmetic, attribute, database, date/time, financial, statistical and text).

Filler includes a spell-checker and thesaurus. Spelling enhancements allow spell-checking of a single object, an entire form or a complete page.

FOR YOUR EYES ONLY

Some of those many documents traveling through the electronic pipe will carry sensitive information. Novell has beefed up its security to bestow added peace of mind to security-minded network administrators.

InForms 4.2 provides an improved form approval process for forms that travel over NetWare and some Unix networks that run Novell Directory Services (NDS). For example, it allows multiple digital signatures, each having multiple approval levels.

In 4.2, Novell now provides tools to extend the NDS user object schema that will enable developers to snap in InForms security objects. Likewise, new tools extend the password schema to store user attributes, passwords, digital signatures, approval groups and levels. InForms creates and stores a TamperSeal in NDS that uses RSA Data Security, Inc.'s Private/Public Key encryption technology.

To prevent documents from disappearing into the electronic ether, 4.2 automatically routes the form to alternate recipients if the designated recipient doesn't respond.

BEST USED WITH GROUPWISE

InForms' tighter integration with GroupWise 4.x and 5.x lets systems administrators install InForms Filler on multiple PCs by simply having users click on a Setup icon sent to them via E-mail. A configuration file parameter preconfigures options such as program location. This reduces systems administration and maintenance costs.

Although InForms supports most popular E-mail systems to transport documents, including Lotus Development Corp.'s CC:Mail and Microsoft's Exchange, its tight integration with GroupWise lets users send forms as messages that open when double-clicked. That enhanced integration also facilitates automatic updating of central data repositories, often not accessible to remote end users. This enhances productivity and timeliness of data for end users of both the forms and associated databases.

Developers can empower advanced users to create their own ad hoc database in one of three areas: public, group or private. A typical benefit of these ad hoc, client-side databases is to simplify sharing data files for list boxes or commonly used data values. If these features overpower users, they can right-click on objects for customizable and context-sensitive help.

HELP!

Although the user's online help files are helpful, online help for newbie developers designing a form from genesis will leave them scratching their heads instead of the surface. It is more helpful for modifying sample forms. Designers familiar with forms design even with competitive packages will have little problems. The graphical tutorial that depicts how to map a field or form to a database is especially helpful.

Developers have their choice of forms creation techniques. Starting out with the simplest methods first, they can modify one of InForms' 50-plus sample forms, import a third-party form, import a WordPerfect table, import an existing database structure or scan in existing paper forms for use as templates. Most time-consuming, although sometimes unavoidable, is to develop a form from the ground up.

Soon Novell will post additional sample forms on its World Wide Web site.

Designers can select from a library of predefined objects, or they can build their own objects and create their own libraries.

Designers can also develop query catalogs and macros. Designers can link fields, forms and databases. All these features enhance designers' productivity and standardization among an enterprise's many forms.

InForms 4.2 also provides eight sample applications (forms with built-in intelligence), including an address book, contact menu, enhancement request, orders and shipping, performance evaluation, travel expenses and travel request.

I modified the travel request for a private yacht cruise to Fiji and a chartered Gulfstream to Portugal, and the form expanded dynamically to accommodate the additional data. It then linked it to related forms. Now, that's my definition of intelligent routing. □

Millman operates Data Systems Services, a consultancy in Croton, N.Y. He can be reached at hmillman@ibm.net.

PRODUCT REVIEW▸

InForms 4.2
Novell, Inc.
Orem, Utah
(800) 453-1267
www.novell.com

OVERALL B+ GRADE

PLATFORMS:
Designer: Windows 3.1/95/NT.
Filler: Windows and Macintosh.

PROS: Automatic document routing; robust field, form and database linking; multifile viewer. Strong security features. Runs on all major networks and with most E-mail systems.

CONS: Some of its strongest features require Novell's GroupWise. Needs a better online tutorial geared toward novices.

PRICING: Windows Designer and Filler, $495. Filler for Windows and Macintosh, $199 for first copy; $99 for each additional copy of Filler.

GRADE: A- for experienced developers and upgraders; B for new users.

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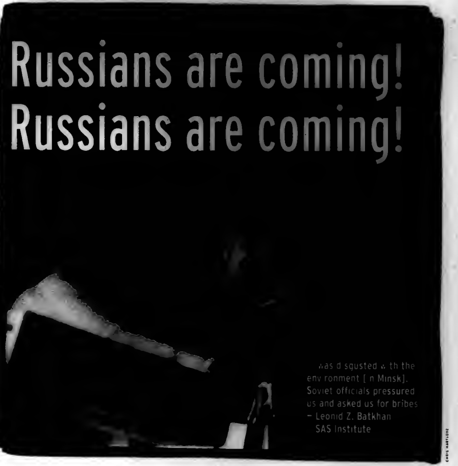
In Depth

The Russians are coming! The Russians are coming!



was disgusted with the environment [in Minsk]. Soviet officials pressured us and asked us for bribes
– Leonid Z. Batkhan
SAS Institute

CHRIS HARTLOVE

▸The former Soviet Union is overflowing with underemployed superprogrammers – not to mention rocket scientists and other assorted Ph.Ds. And many are finding work in U.S. IS organizations. But before you renew your passport and go on a hiring spree, be prepared for some management challenges.

BY GARY H. ANTHES

No sooner had Sun Microsystems, Inc. posted Java specifications on its World Wide Web site than Russian programmers began to show up at Sun's development facility in Moscow. The programmers claimed to be proficient in the brand-new, red-hot language.

"We couldn't believe it," recalls Arvind Deogirikar, an international business development manager at Mountain View, Calif.-based Sun. "We had a gentleman from Moscow State University say, 'I know the language. You trust me.' It turned out he was really good at it, and we hired him."

The programmer — bright, ambitious and largely self-taught — is one of thousands of computer professionals in the former Soviet Union who've been left unemployed by stagnant economies and a military in decline.

But the bad news in Belarus, Russia and Ukraine is good news for U.S. companies that have tapped a rich vein of information systems talent, often at bargain-basement rates.

Some programmers work in development centers such as Sun's in their countries, set up by U.S. companies to harness overseas talent. Others are immigrating to the U.S. and becoming citizens, and still others are arriving on temporary visas reserved for people with scarce skills.

U.S. managers praise the Russians for their technical skills, willingness to work hard and ability to learn quickly. But, they add, the programmers present new management challenges, and those who come to the U.S. aren't always happy here.

Leonid Z. Batkhan, an application programmer at SAS Institute, Inc. in Rockville, Md., left Belarus in 1991, only two years after starting a software company in Minsk. The company employed 30 to 40 people — "superprogrammers," Batkhan says— at pay as low as $200 per month.

But Minsk is no Silicon Valley. "I was disgusted with the environment," Batkhan says. "Soviet officials pressured us and asked us for bribes."

The Russians are coming, page 89

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***PC Magazine*, August 1997**

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The Russians are coming!

CONTINUED FROM PAGE 87

Amer can Manage

CHRIS HARTLOVE

Batkhan, who is Jewish, also fled Belarus to escape anti-Semitism. "I was always a scapegoat," he says. He arrived in the U.S. with the equivalent of a Ph.D. in computer science and $150.

Batkhan estimates that half his former computer science classmates at a university in Minsk now hold non-IS jobs.

He says he benefits from discipline developed while programming on primitive computers. For example, he wrote complex mathematical algorithms for real-time diagnoses of diesel engines on a computer with only 4K bytes of memory.

"Every millisecond was essential, and I had a lot of fun trying to find tricky ways to do it," Batkhan says. "Now it's a habit to write efficient code."

"Russians have a good knowledge base for how to solve problems in very difficult situations," says Alexandre Barilov, a senior engineer at Marimba, Inc. in Palo Alto, Calif. Barilov came to the U.S. three years ago as part of the U.S. arm of Moscow-based ParaGraph International, a graphics software company since acquired by Mountain View, Calif.-based Silicon Graphics, Inc.

Barilov boasts that the mathematical grounding of ParaGraph's Moscow programmers enabled them, despite the most primitive of hardware, to develop the best three-dimensional graphics engine in existence and the handwriting recognition software developed for Apple Computer, Inc.

Alexander M. Stein, a senior programmer/analyst at American Management Systems, Inc. in Fairfax, Va., fled the U.S.S.R. in 1990, also because of anti-Semitism.

Stein earned a degree in computer science at New York University two years later. "I was good at math and science and abstract things. I was good at thinking logically," he says. Asked about a reference to chess on his professional resume, Stein shrugs. "Lots of people play chess in Russia," he says.

INTELLIGENTSIA

Indeed, Russian society holds mental activities such as chess and programming in high regard. "Russians believe in a class of people called 'intelligentsia,'" Stein says. "For educated Russians, a priority is to be considered an intellectual, to read a lot, to analyze."

As for the notion that Russian programmers as largely self-taught, Stein says they are aided by their utter disregard for international copyright laws.

A Russian who wants to know about Powersoft's PowerBuilder, for example, can just pirate the software and avoid the procurement costs and delays that would encumber a U.S. programmer, Stein says.

Sun has about 250 Fortran, Pascal and Java developers at three centers in Russia. A strong foundation in math and science "is deeply rooted in their logic," Deogirikar says.

On the downside, Russians often lack project management skills, Deogirikar adds. And sometimes the American work ethic is missing, he says — possibly a relic of the communist system, under which hard work and entrepreneurial zeal didn't necessarily pay off. "[Russians] sometimes have the old notions," he says. "It's OK if someone doesn't come to work or do their job."

Alternative Technology Resources, Inc. in Sacramento, Calif., brings workers to the U.S. from the former Soviet Union on temporary work visas. George Van Derven, the company's president, says programmers in Russia typically earn between $100 and $1,000 per month and jump at the chance to work in the U.S., where they are paid prevailing U.S. wages.

DIRTY WORK

They will work on legacy systems and at tasks that U.S. programmers often shun, Van Derven says. "You'd have to pay a premium for [a U.S. programmer] to do the mundane work that someone else could do," he says. "The question is, 'Where is that someone else?' The answer is, 'Not in this country.'"

Van Derven says he has never failed to find a qualified candidate in the former Soviet Union for a U.S. job opening. He has about 80 such people in the U.S. now and says that soon will grow to 150.

Computer Sciences Corp.'s (CSC) Financial Services Group in Austin, Texas, employs 14 Russian programmers supplied by Van Derven's company on two-year contracts. They work in Cobol and assembler language on mainframe-based insurance applications for CSC's outsourcing services.

The Financial Services Group turned to Russia when it couldn't fill all its needs — it will hire 100 to 150 programmers this year — within the U.S., according to Nancy Nelson, customer executive. She says she will go to Russia next spring to interview people for 12 to 15 additional positions.

In technical skills, the Russian programmers are roughly the equals of good U.S. programmers, Nelson says. And they are exceptionally dedicated and hardworking, she says, in part because many of them hope someday to gain U.S. citizenship and become permanent CSC employees.

But Nelson says she underestimated the communications challenges of working with the Russians. They are excellent readers of English, but oral communications require special care, she says. "We go through a lot of careful dialogue — 'Do you understand? Repeat back to me.' We manage them a little differently."

Konstantin Sidorin, a Latvian programmer at CSC, says English hasn't been a barrier for him. But life in the U.S. has its drawbacks, and he says he hasn't decided whether he wants to stay. Although the pay here is considerably higher than in Russia, so are expenses.

"And for my wife, it is difficult," Sidorin says. "She was a cosmetics designer in Riga. Now she is sitting at home without much contact with people."

Asked if there are lessons the U.S. might learn from the former Soviet Union, Batkhan says U.S. schools should emphasize problem-solving and analytical skills rather than rote memorization.

But isn't U.S. computer technology the best in the world? "It's a disease here, to feel you are the best," Batkhan says. "As soon as you feel you are the best, you stop trying."

But clearly the U.S. finds favor with Batkhan. On his recommendation, his fiancee — now his wife — and her daughter followed him to the U.S. from Minsk, as did his brother and parents. His brother now works as a programmer in the Washington area.□

Anthes is Computerworld*'s senior editor, special reports. His Internet address is gary_anthes@cw.com.* Computerworld *Senior Editor Kim S. Nash contributed to this story. Her Internet address is kim_nash@cw.com.*

Cold War, round two

Foreign programmers not eligible under U.S. immigration laws to enter the U.S. permanently can be brought in temporarily under the government's H1-B program. H1-B visas let companies hire foreign workers in the U.S. for up to six years, provided that suitably skilled U.S. workers aren't available and the workers are paid at competitive U.S. rates.

Some U.S. high-tech workers are threatened by H1-B. They say it has been abused by companies that see it as a way to replace U.S. workers with cheap foreign labor.

According to the U.S. unit of the Institute of Electrical and Electronics Engineers (IEEE) in Washington, 11,600 computer scientists entered the U.S. last year with temporary visas. That far exceeds the need based on genuine skills shortages, contends Paul Kostek, chairman of the IEEE-U.S. Activities Board's Career Policy Council.

Kostek says IS skills shortages have been overblown. "In the year 2000 problem, for example, there is basically no limit on what companies are willing to pay, and there are plenty of people available to do the work," he says.

Alternative Technology Resources brings in programmers from the former U.S.S.R. under H1-B visas. "We are not taking the place of American workers," says President George Van Derven. "And we are not doing the same work American workers would do for less money." — Gary H. Anthes

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  David P. Berry, Attorney at Law, Berry, Appleman & Leiden LLP

General Session
- **Candidate Selection**
  Dr. William S. Swan, President, Swan Consultants, Inc.

12:30pm Luncheon Keynote:
Maryfran Johnson, Executive Editor, Computerworld

Concurrent Sessions:
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  Sue Keever, President, The Keever Group
- **Immigration Update**
  David P. Berry, Attorney at Law, Berry, Appleman & Leiden LLP

Town Hall Forum
Fred S. Rodriguez, Corporate Manager of H.R., Hughes Aircraft

5:30pm Program ends

Selected sessions include:

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For more information, call the conference hotline:
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Hard Facts on Soft Skills

By Jill Vitiello

Sure, everybody pays lip service to the need for communication skills. But what's the real payoff for the IS pros who develop them?

For years, industry gurus have urged IS professionals to develop soft skills. Those are the skills you're supposed to use when you're forced to deal with nontechnical people who don't know a mouse from a mainframe. You know the drill — "active" listening, speaking English rather than computerese and basically letting frustrated users know that when their laptops freeze, you feel their pain.

Many IS organizations have paid lip service to making their staff members more user-friendly. Some have even provided soft-skills training. In an effort to melt their hard, technical edge, information systems professionals have been charged with re-engineering a new paradigm that empowers them to think outside the box.

Yeah, right.

If you hear one more airhead user suggest that you think outside the box, you're going to crawl back inside the box and tape the lid shut. But before you grab that tape gun, listen up. There are some subtle changes going on in the corporate and vendor environments that may ultimately change the way you view those soft skills.

"Users don't have the same tolerance for techies that they once did," says Kate Nasser, president of CAS, Inc., a New Jersey-based consulting firm that integrates business, technology and people. "Technology has been a part of users' offices for a long time, and it's become less of a mystery to them. In the past, users didn't expect techies to have interpersonal skills. Today, no one is making excuses for them." The explosive growth of desktop computing has taken information technology out of the glass house and into users' offices. Like it or not, technical people must interact with nontechnical users more frequently than ever before. And because business has become so critically dependent on technology, IS professionals must speak the same language as their colleagues in finance, sales, marketing and human resources just to do their jobs.

Recognizing this shift, universities and consulting firms are tailoring their soft-skills training programs to meet the needs of a dynamic workplace. IS professionals now must be as confident in their interpersonal abilities and business understanding as they are in their technical know-how.

Don't dismiss these programs as IS charm schools. The best soft-skills programs use real-life case studies and teach practical skills that can be put into effect on the job immediately. Here's a look at soft-skills training today from the organizations that offer the programs and the IS professionals who've gone through them. □

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COMPUTERWORLD

FOR ADVICE on weighing an IS career with a vendor, visit our Web site at: www.computerworld.com/careers

TO REGISTER for daily IS careers advice, visit our home page at: www.computerworld.com

Are you soft in the head?

IS professionals should master these 10 critical, nontechnical skills:

- **Managing IS customer expectations**
- **IS customer service**
- **Earning a partnership role with IS clients**
- **Cooperation and collaboration**
- **Ability to influence**
- **Managing change**
- **Resolving conflicts constructively**
- **Active listening**
- **Accelerating the delivery of results**
- **Adapting to change**

Source: Interpersonal Technology Group, Inc.

> "Many IS pros think soft skills are important but not urgent. When service levels drop so low that users go out and build their own IS organization then soft skills become urgent
>
> – Cliff Hallberg, managing principal Interpersonal Technology Group, Inc

Hard Facts on Soft Skills

CONTINUED FROM PAGE 91

New job requirement

The last laugh's on IS professionals who think soft skills are a joke. It's common knowledge that high-level IS careers run aground when managers find themselves without the interpersonal and business skills necessary to operate at the highest levels of the corporation.

Now the same thing is happening to code crunchers. The IS department at Public Service Electric and Gas Co. (PSE&G) in Newark, N.J., used a zero-based staffing approach when it restructured to meet the utility's new emphasis on customer focus. All employees within the department had to interview for available jobs as though they had never worked for the company. In addition to technical proficiency and other criteria, the incumbent applicants were required to demonstrate their ability in several soft skills, such as listening and communicating effectively.

"Some of our long-standing employees didn't make the cut," says Glenn Rogers, vice president of information technology at the utility. Even with more than a year's notice about the importance of what Rogers calls the "people dimension," some old-school techies chose not to change. They lost their jobs.

During the restructuring process, PSE&G employees were given training opportunities to improve their soft skills. Rogers introduced customer satisfaction as a fundamental measurement of success in his department, tying it to compensation.

Today, the department is organized like a consulting firm. IS professionals are assigned to resource managers, who are responsible for helping them identify and get the training and career development they need to be more productive for their internal customers. The resource managers are IS professionals "with a human resources affinity," Rogers says. □

Vitiello is a freelance writer in East Brunswick, N.J.

Classes are in session

One of the best places to find short-term executive development programs is at the business schools of major universities. Although most of the programs weren't designed specifically for IS professionals, up-and-coming techies are welcomed with open arms.

Darden Graduate School of Business Administration at the University of Virginia offers a Leadership for Extraordinary Performance (LEP) that has the blessings of management at Oracle Corp. in Bethesda, Md. The company sends several of its promising, midlevel IS pros to Darden on a fairly regular basis. Two LEP participants say this soft-skills course benefited them in the following ways:

● **Christie Ellsworth**, technical team leader, Oracle:

"In our industry, you have to reinvent yourself every 12 to 18 months or you're behind the curve. Darden helped me learn how to lead change right where I am now at my level in the company. The program also gave me the chance to meet people from all over the world — Europe, Asia and the Mideast. I saw that the issue of leadership and change are global concerns across a range of businesses."

● **Patricia Gregory**, technical team leader, Oracle:

"As a technical team leader, I'm more of a player/coach than a manager. Leadership training taught me how to communicate the needs of my team and request resources across the organization to accomplish our goals."

In the heart of Silicon Valley, **Santa Clara University** offers what may be the nation's only leadersbip program designed specifically for IS professionals.

The Information Technology Leadership Program (ITLP) is hosted by the Executive Development Center at the University's Leavey School of Business and Administration.

The program was launched this year to help IS executives improve their skills in general management, leadership, interpersonal communication, consulting, and sales and marketing.

● **Keith Nakashima**, director of management IS, The Gap, San Bruno, Calif.:

"Technology doesn't run itself. We need people to do the work. Over the three days, I saw a unique blend of approaches from some top-notch IS executives."

● **Kathy Cruz**, chief information officer and vice president of information technology, Aspect Telecomm, London:

"Historically, CIO meant "career is over." It doesn't have to be that way. A CIO must be an equal partner with other corporate executives and must know how to build relationships, influence peers and use technology to solve business problems or create business opportunities. The program provided new insights into how to do that." □

Interpersonal skills are the distinguishing characteristics that differentiate outstanding IT people

– Jim Webber executive director Omicron

Soft skills for hire

Several consulting firms and industry groups offer courses in different soft skills. Some organizations periodically offer public seminars; others will bring their programs right to your company's training room. Those training providers include the following:

COMPANY	SPECIALTY	LOCATION	CYBERCONTACT
CAS, Inc.	Customer service and team building	Somerville, N.J.	KNasser_4CAS@compuserve.com
Interpersonal Technology Group, Inc.	Organizational development; business, interpersonal and management skills	Rockville Centre, N.Y.	www.itg-web.com
Omicron Telesystems, Inc.	"MBA in a Nutshell" for IS professionals	Mountain Lakes, N.J.	www.omicronet.com
Ouellette & Associates Consulting, Inc.	Developing the human side of technology	Bedford, N.H.	pouellette@ouellett.com

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MANAGER OF INFORMATION TECHNOLOGY. Responsible for creating a competitive advantage through the integration of information technology in the Energy Marketing Division of the company. Individual will be a member of the Trading and Risk Management Group's management team and will be expected to contribute to the strategic direction of the group and of the company as a whole. Responsibilities include identifying areas where IT could be used to improve profitability, creating IT solutions, overseeing IT technology in a trading floor environment, managing the capital projects which support the technology plan, directing the design and development of systems across all platforms, ensuring telecommunication activities are accomplished to ensure the networks on-going business needs and coordinating telecommunication activities with other business divisions as needed. Qualified applicants must have a Bachelor's degree in Information Systems, Engineering or Related Field or an Advanced Degree, two years of related occupational experience in Information Systems Design/Development in a Financial Trading Energy Marketing or Related Field. Ten years of occupational experience must include two years of experience in quantitative methods and statistical analysis and two years of experience with ORACLE, MSSQL Server, Delphi, Visual Basic and C Program languages. An advanced degree requiring courses in quantitative methods and statistical analysis may be substituted for two years of related occupational experience. Salary: $70,000 per year. Hours 8:00am to 5:00pm Monday thru Friday. Only persons authorized to work permanently in the United States need apply. Please forward resume to Ms. Ginny Burton, Department for Employment Services, 275 East Main Street 2W, Frankfort, Kentucky 40621. An equal opportunity employer. Job Order # 349923.

Systems Engineer, Applications. Pay Scale: $46,936 - $61,017 (40 hours per week). Department: Pitud. Education: Bachelor's degree, Computer Science. Major Job Duties/Responsibilities: Under general directions completes programming assignments; designs, plans & participates in implementation of large scale applications system projects, performs problem resolution & support activities; trains other employees on application systems products; may act as project leader; practices formalized analysis, design, documentation & testing procedures; will use CL, Hawkeye query, EZView, SCA, RLU, PDM (AS/400), ISPF, COBOL II, JCL, VSAM (mainframe) plus RJE, ICF. Qualifications: 1 year's experience as Project leader; 4 year's experience in analysis, design, coding and testing. Prefer experience in on-line applications and cross-platform applications. Telecommunications experience a plus. Business background should include financial operations (e.g., billing, accounts receivable, installment loans, reporting) and customer data management (e.g., sales and order entry, customer database). Qualified applicants please submit resume, including salary history and requirements to: Georgia Department of Labor, Job Order # GA 6151208, 2943 North Druid Hills Rd., Atlanta, GA 30329-3909 or the nearest Department of Labor Field Service Office.

SAP Programmer needed by Info Technologies Co in Edison, NJ. Must have 6 months exp as SAP Prgmmr or 4yr as Prgmmr Analyst. Must have Bach-Comp Sci or Electronics Engg. Respond to: Pinnacle Systems Inc, 7 Lincoln Hwy, Edison, NJ 08820.

M·D·S
CONSULTING

Full-time Systems Consultant to be part of a team responsible for developing a test automation tool using TCL and Expect. Develop this tool to design automated testing for all protocols, all link layer protocols and different IBM routers and switches platforms. Perform function, product and system verification testing for IBM routers and switches (2200-200, 2200-500, 2216, 2210). Test the Novell protocols (IPX, SPX, RIP, SAP, NCP, NETBIOS, NLSP). Design and run test plans for each tool. Responsible for cable, configuration and debugging IPX and IP over token-ring, ethernet, frame-relay, HDLC, ISDN, X25 and ATM networks. Assist in the design of Product and System verification test-bed. Perform interoperability testing of IBM routers and switches with IBM and other kinds of routers and switches. Assist in function and product verification test for IP protocols (TCP, UDP, IP, OSPF, RIP) and bridging. Must have a Bachelor's degree in Computer Science. Educational background must have included routing protocols including IPX, IP, TCP, UDP, OSPF, and link protocols including frame-relay, HDLC, ATM, X25, token-ring and ethernet, and C/C++, OS2 and UNIX. Salary $41,000/yr. 40 hrs per week. All resumes must include your Social Security Number, the Job Order number NC5770344 and DOT code 030.167-014. Please send resume to Job Service, 742-F East Chatham Street, Cary, NC 27511.

Software Engineer. DUTIES: Researches, designs, and develops computer software systems, in conjunction with hardware product development for industrial purposes, applying principles and techniques of computer science, engineering, and mathematical analysis. Analyzes software requirements to determine feasibility of design within time and cost restraints. Formulates and designs software system, using scientific analysis and mathematical models to predict and measure outcome and consequences of design. Develops and directs software system testing procedures, programming, and documentation. Coordinates the installation, maintenance, and upgrading of the software system. REQUIRMENTS: Bachelor's Degree, with major field of study in Computer Science plus four (4) years of experience in the job offered or four (4) years of experience as a teacher-computer languages and hardware systems. Must hold a Bachelor's Degree, with a major field of study in Computer Science, or the equivalent, as determined by a recognized international academic evaluation service. SALARY: $880.00 per week. HOURS: 40 hours per week (Monday-Friday, 9:00 A.M. to 5:00 P.M.) CONTACT: Interested applicants, please submit resume only to: FDLES Bureau of Operations, 1320 Executive Center Drive, Suite 110, Tallahassee, Florida 32399-0667. REFERENCE: Job Order Number FL-1637364.

Database Administrator. Install, create and administer Oracle 7 databases on multiple platforms, and analyze, design and implement business applications using Computer Aided Software Engineering (CASE) techniques and Oracle tools. Demonstrated ability installing, creating and administering Oracle 7 databases under multiple operating environments and tuning the database and the application for optimum performance; Demonstrated ability developing optimized data access code and procedures using SQL * Plus and PL/SQL and applying CASE methodology for database analysis and design, Demonstrated ability designing and developing user screens and MIS reports using Oracle Forms and Oracle Reports tools. $63,000/yr 40 hr/wk, 9 a.m. - 5 p.m. Must have 2 yrs exp. or 2 yrs exp as Sr. Systems Analyst and M.S. Comp. Sci. rel. field/equiv. Send 2 resumes: Case #71393, P.O. Box 8968, Boston, MA 02114.

Programmer Analyst - Mt. Laurel, NJ - Analyze requirements, design, test & implement information systems using Visual C++, C++/C languages, Windows SDK, MFC & OLE. Req Bach in Comp. Sci., Math or Engr & 2 yrs exp, M-F, 8AM-5PM, 40hrs/wk, $65,000/yr. Send copy of ad and resume to: Robert Keegan, SPECTRUM CONCEPTS CONSULTING CORP., 100 Wood Ave South, Iselin, NJ 08830. Ref:KN.

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CAREER AGENT

OFFICIAL RULES - NO PURCHASE, PAYMENT OR CONTRIBUTION NECESSARY - To enter the Sweepstakes outlined below, follow all entry instructions published in the offer. Your entry must be received by the date specified elsewhere in the offer or by 1/15/98, whichever is sooner.

Super Prize Sweepstakes - Winners will be selected in random drawings from all eligible entries received. Early Bird winner will be selected in a separate drawing from among all eligible entries. Sweepstakes begins 9/3/96. Drawings will be conducted on or about 4/30/98 by Ventura Associates, Inc., an independent judging organization whose decisions are final. Drawing will be held at 1040 Avenue of the Americas, New York, NY 10018. You need not be present to win.

CONSUMER DISCLOSURE [illegible] Total prize value: $182,000.00. [illegible] Early Bird Prize [illegible] All Super Prize Sweepstakes prizes will be awarded.

[illegible]

For winners list (available after 6/30/98) send self-addressed, stamped envelope by 1/15/98 to: Super Prize Winners, P.O. Box 8103, Medford, NY 11763-8103.

THE FOLLOWING APPLIES TO THE SWEEPSTAKES ABOVE - No purchase, payment or contribution necessary to enter or win. [illegible] All entries become the property of sponsors and none will be returned.

[illegible]

Sweepstakes is open to legal residents of the U.S., Canada and Europe [illegible] All federal, state, provincial and local laws and regulations apply.

All prize values are in U.S. currency. No transfer of prize permitted. A winner is responsible for all taxes on his/her prize.

[illegible]

Sweepstakes may be presented in different creative presentations by different organizations. Ventura Associates, Inc., 1040 Avenue of the Americas, New York, NY 10018, the independent judging organization [illegible]

COMPUTERWORLD TECHNOTOYS WEEKLY SWEEPSTAKES OFFICIAL RULES: No purchase necessary. [illegible] All entries become sponsor's property & will not be returned.

[illegible]

Sweepstakes is open to legal US residents, 18 & older. [illegible] Sponsor: Computerworld, Inc. 500 Old Connecticut Path, Framingham, MA 01701. [illegible] All federal, state & local laws & regulations apply. Void in Puerto Rico & where prohibited by law. For winners list [illegible] send a SASE to: Sweepstakes Winners, Computerworld TechnoToys Sweepstakes, 500 Old Connecticut Path, Framingham, MA 01701.

ATTEND

Southern California
CORPORATE
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The Computerworld Southern California Corporate Technical Recruiting Conference!

Monday, October 20, 1997

Sheraton Grande Hotel, Los Angeles, California

On October 20, 1997, you have a special opportunity to update your recruiting skills and network with recruiters in your area at the first annual Southern California Corporate Technical Recruiting Conference, held at the Sheraton Grande Hotel, Los Angeles, California.

A Full Schedule of Contemporary Topics

7:45am **Continental Breakfast & Conference Registration**

Concurrent Sessions:

Connecting Your Recruiting Strategy to What the I.T. Professional Needs
Sue Keever, President, The Keever Group

Immigration Update
David P Berry, Attorney at Law, Berry, Appleman & Leiden LLP

General Session

Candidate Selection
Dr. William S. Swan, President, Swan Consultants, Inc.

12:30pm **Luncheon Keynote:**

Maryfran Johnson, Executive Editor, Computerworld

Concurrent Sessions:

Connecting Your Recruiting Strategy to What the I.T. Professional Needs
Sue Keever, President, The Keever Group

Immigration Update
David P Berry, Attorney at Law, Berry, Appleman & Leiden LLP

Town Hall Forum

5:30pm **Program ends**

Selected sessions include:

Luncheon/Keynote Address

Maryfran Johnson, Executive Editor, Computerworld

Maryfran Johnson, one of the industry's leading watchers of the information Systems profession will give you an up-to-the-minute view at this very special keynote address.

Candidate Selection

William S. Swan, President, Swan Consultants, Inc.

Now - more than ever - hiring the most productive people is critical. Yet most interviews are no better than chance at predicting how a new employee will behave on the job. In these sessions, you'll learn about the skills necessary to make accurate predictions and conduct an organized selection interview.

Connecting Your Recruiting Strategy to What the IT Professional Needs

Sue Keever, President, The Keever Group

Based on findings of research conducted with five of America's most respected corporations, you'll learn what companies are looking for in today's IT and technical professional and how they are successfully targeting candidates. In addition, findings from focus groups of IT and technical professionals will uncover what candidates are looking for in an employer and how they go through the job search process.

Town Hall Forum

In this session, you'll not only be able to propose your specific questions for open discussion, you'll learn of real world issues and solutions from your peers. You won't want to miss this rare opportunity.

For more information, call the conference hotline:
1-800-488-9204

Client/Server Software Engineer: Design, develop & test client/server back end software applications for Sybase using ESQL, CT Lib & Oracle using Pro C & OCI. Reviewing, analyzing & providing feedback on technical designs. Implementing prototypes of designs. Participating in design review sessions. Implementing & testing production software. Developing & implementing unit test plans using company's standard methods. Maintaining knowledge of past & current development tools. Consulting with company's documentation team to ensure that documentation and training materials are consistent with products functions. Performing database administration duties. Work in a Sybase & in a Unix software development environment. Use C & C++ in a Unix environment. Bachelor of Science in Computer Science or equivalent documented by an evaluation agency. 2 yrs. of experience in job offered &/or 2 years as Senior Programmer Analyst. Experience to include 2 yrs. of experience with each of the following (concurrent): (i) developing client/server back end software applications for Sybase using ESQL, CT Lib & Oracle using Pro C & OCI; (ii) working in a Sybase & in a Unix software development environment; & (iii) using C & C++ in a Unix environment. $48,000/yr. OT exempt; 8:30 a.m. to 5:00 p.m., M-F, OT 5 hrs./wk. Must have proof of legal authority to work permanently in the U.S. Send 2 copies of both resume & cover letter to Illinois Department of Employment Security, 401 South State St. 7 North, Chicago, IL 60605, ATTN: Mary Millen, Reference #V-IL 16434-M. An employer paid ad. No calls.

Careers

http://careers.computerworld.com

SYSTEMS ANALYST - Plans, designs, develops, tests and documents computer programs based on knowledge of programming techniques and computer systems. May consult with users of computer programs to determine programming requirements. May be involved in installing completed programs onto production computer systems. May direct and coordinate the activities of other Programmers and Programmer/Analysts. May prepare cost estimates and project plans. Work with COBOL, DB2. Req'd B.S. Degree in Computer Science, Engineering or Math. 40 hrs/week. $50,000/year. Must have proof of legal authority to work permanently in the U.S. NO CALLS - PLEASE SUBMIT 2 COPIES OF BOTH RESUME AND COVER LETTER to ILLINOIS DEPARTMENT OF EMPLOYMENT SECURITY 401 South State Street - 7 North Chicago, Illinois 60605. Att: JACK SCHAFFER. Refer to job order # V - IL 16589 - H. AN EMPLOYER PAID AD.

Software Professionals - Madison, WI. TRIAD DATA's Madison branch needs experienced NATURAL/ADABAS and COBOL/CICS professionals (DB2 or IMS) possessing at least 2 yrs. of exp. in these skill mixes. Competitive salaries and benefits. Send resume describing qualifications to Paul Ray, Branch Manager, TRIAD DATA, Inc., 25 West Main Street, Suite 805, Madison, WI 53703; or call 1-800-964-8314 or 608-286-6000; or fax 608-286-6010.

Programmer Analyst, Clarkston, MI. Develop front-end facilities to view, analyze, simulate and report the data and COBOL II programs for Inventory Management Systems. Utilize tools for compiling, linking and testing software programs for IMS/DB/DC and BMP. Debug, modify, tune and enhance implemented software systems in XPEDITER and TSO/ISPF environments. Req'd. Bachelors in Comp. Sci. or Engg. or Math. 2 years exp in job offered. 40 hrs/wk, 9am-5pm, $38,000/Year. "Employer Paid ad" Send resumes to Deboer EDP Services, Inc., 3994 Ortonville Road, Clarkston, MI 48348.

Programmer Analyst for often. comp. in various locations in Columbus, Ohio. Design, development, implementation, testing and administration of software systems using ORACLE, Informix, Powerbuilder, C, C++, and UNIX for Client/Server and mainframe applications. 2 yrs. related experience should include experience in ORACLE, INFORMIX, C, C++, POWERBUILDER and UNIX. 40 hrs./wk., 8am-5pm, Mon.-Fri. Salary $60,000 per year. Send 2 resumes & cover letters (no calls) to ES Su Pepe, REF# 3086T, Ohio Bureau of Employment Services, P.O. Box 1618, Columbus, OH 43216.

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1-800-488-9204

Public Employees Retirement System of Nevada

PERS, with 49 employees, seeks a Manager for the Information Systems Division within its Carson City, Nevada headquarters. The seven-person IS Division currently interfaces with an external consulting firm which recently began a four-year major client-server systems implementation project, moving from Novell to an NT environment. The ideal candidate's education and experience should include a Bachelor's degree from an accredited college or university in management information systems, computer science, or other closely related field plus seven years of professional information systems work. The current salary range is from $47,487 to $[illegible]. For additional information regarding this position, contact Patty Beck at (702) 687-4200 or write to 693 W. Nye Lane, Carson City, NV 89703 for a detailed job description.

Senior Software Engineer, Credit Card Applications to research, design, develop and maintain highly complex software systems, based on CICS/MACRO, ASSEMBLER, COBOL II and DB2, for production credit card applications which use INET, BASE II and the EDS network system, using a methodology to predict outcome of design, evaluate interface of these systems with IBM mainframe using TSO/ISPF, OS/JCL, MVS/ESA, DataXpert and Fileaid, and develop and direct system testing procedures, programming and documentation. Multiple openings available (at least 2). Requires B.S. or equivalent-level degree in Computer Science, Mathematics, Physics, Engineering, Chemistry or a related math-based discipline. Successful candidate must be able to perform job duties as date of application. Qualified applicants must presently be eligible for permanent employment in the United States. Salary $56,000 per year plus employee benefit plan: 40 hours per week. Send resumes to Ms. Sarah Haenel, District Manager, Ajilon Services, Inc., 1607 Park 270 Drive, Suite 250, St. Louis, Missouri 63146-4021. An Equal Opportunity Employer.

Software Engineer: Creates, develops, enhances, customizes and modifies a software system installed in a VAX/VMS operating systems using VAX Rdb to control and monitor manufacturing of products, process orders, and track inventory of raw and finished goods. Creates and develops technical specifications for customization including modification of modules into entire software package to insure proper integration using DECforms for front end design. Performs system testing of modified and new function modules to insure processing performance and data acquisition using C language for batch processing. Will use software module management utilization to control, build, and develop appropriate software modules including use of Visual Basic to be used as graphic user interfaces. Requires Master's degree in Software Engineering, Computer Science, or Computer Science and Engineering. Also requires two years experience in the job to be performed. Job Location: Waukegan, IL. Please send resume to: Mr. Vydyanath Sheepuje, InfoWeb Systems, Inc. 3435 Asbury Road, Suite 150, Dubuque, IA 52002. No calls.

Senior Programmer-Analyst. Milwaukee, WI provider of financial data processing services seeks individual to work as member of Internet Banking team. Duties include: Design, develop & implement Internet CGI scripts for Web-sites. Modify, enhance and maintain Internet Banking Application. Provide technical customer support. Assist in training of Internet Banking team in use of UNIX, ANSI C and other object-oriented development tools. Test & verify systems. Develop, enhance and maintain SQL libraries for database agents. Responsible for UNIX shell programming when applicable. Represent Internet Banking team in relevant meetings. Responsible for following employer's standards & guidelines. Responsible for creating & maintaining technical documentation related to Internet Services. Requires: B.S. Computer Science, MIS, Electronics or Computer Engineering, plus 2 yrs. experience job offered, or as Programmer-Analyst II, Systems or Software Engineer, Systems Programmer, Software Analyst, or Systems Analyst. Following special requirements may be satisfied during required work experience. 2 yrs. experience UNIX II with C and C++ programming languages; 1 yr. experience SQL database language, & with object-oriented [illegible] (such as Oracle or Informix). Salary: $45,026 - $59,437. 40hr/wk. Send 2 copies of resume to: Mike Brooks, JETS-ALC, P.O. Box 7972, Madison, WI 53707-7972, for Case # C108308.

Applications Developer/Support Specialist assigned as Programmer to design, develop, test, implement and maintain PC-based computer software applications for use in financial services operations and administration, and provide user support for mainframe and PC-based applications and end users, utilizing IBM PC and Mainframe hardware platforms, COBOL, C and PASCAL languages, and Pcanywhere user support tools. Requires Bachelor of Science or equivalent degree in MIS, Computer Science, Math or a closely related field and one year experience in user support. Qualified applicants must presently be eligible for permanent employment in the United States. Successful applicant must be able to perform job duties as date of application. Salary $35,000 per year plus company employee benefit plan, 40 hours per week (8:30 a.m. to 5:00 p.m.). Send resumes to Mr Donald E. Pace, Vice President, Human Resources, Inventory Finance Group, Deutsche Financial Services Corporation, 655 Maryville Centre Drive, St. Louis, Missouri 63141. An Equal Opportunity Employer.

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Qualified candidates should send resume, position preference, and salary requirements in confidence to Commerce Insurance Company, Attn. Mary-Beth Kaczynski, Dept. CW, 211 Main Street, Webster, MA 01570. Email to mkac@compuserve.com or fax to 508-949-4021

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We need creative, skilled and aggressive programmers/programmer analysts to help build the systems that will launch our company into the 21st century. At Commerce Insurance, your skills will be crucial to our growth as we move from an AS400 environment to a mainframe, and as we build the system needed to expand geographically beyond Massachusetts.

We have several opportunities for people to be part of innovative projects using the latest technologies. If you have at least three to four years experience with COBOL and/or RPGIII and DB2 knowledge on the IBM S/390 then you will want to put your experience to work at The Commerce Insurance Company.

BUSINESS ANALYSTS

We are seeking highly motivated professionals to work as liaisons between the end users, technical individuals and external vendors to provide automation and service support for our business needs. Major responsibilities will include the project development process, project implementation and support of software packages. If you have a four year degree or at least five years of systems experience in a support capacity for a business area this may be the opportunity that will challenge your career. If you are experienced with a system development methodology tool, workflow analysis and PC systems this would prove to be a plus for this position.

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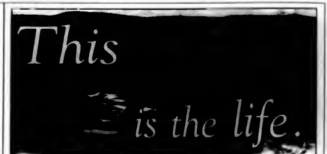
Caring in everything we do.



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Database Analysts
Software QA/Test Analysts

Liberty I/S has begun a major expansion of its software development centers and we have opportunities available at all levels for our strategic development initiatives. You'll work in an object-oriented, client/server environment, using Win95/NT, C/C++, VC++, Corba, OMT, SQL, Sybase, DB2, MQ, RS6000AIX and MVS/ESA. Choose from our corporate data center in Portsmouth or our Massachusetts development center, located just off Route 128 in Danvers. Please send your resume to:
Bill Hickmott, Liberty Mutual Information Systems, 225 Borthwick Avenue, Portsmouth, NH 03801. Fax (603)431-0709; email: Jobs@Lmig.com

Liberty Mutual is an equal opportunity employer committed to workforce diversity.

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LI based Direct Marketing industry leader seeks 5 years experience in merge purge, list management, house file selection processing, NCOA processing. Modeling a plus.

Must have experience managing a company wide customer database. We support all customer file activity in house and you should have hands on experience working in an in house customer file environment. You will support the Marketing Manager with mailings and the selection process.

Skills should include: Group I, IBM Mainframe and NCOA. The perfect candidate will have strong written and oral skills, as well as the ability to work in a fast paced shop.

We offer a casual LI workplace environment, competitive salary and benefits. Please submit your resume in confidence to Human Resources Dept, P.O. Box 85, Westbury, NY 11590 or fax to 516-997-8351. Include Salary requirements.

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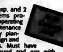
3 yrs. programming including 2 yrs systems analysis exp. Coordinates projects from analysis through implementation. Knowledge of systems development methodologies. Proven ability to lead a team. Must be people oriented and possess strong communication skills. Strong COBOL, CICS, MVS, and VSAM skills. $35,713 annually.

Systems Programmer



4 yrs programming exp. and 2 yrs. mainframe systems programming including: operating system software maintenance and tunning, capacity planning, file structure design and data communications. Must have IBM systems background and exp with VSAM, CICS, and MVS. $37,814 annually.

Please Contact:

Personnel, Polk County Board of County Commissioners
P.O. Box 9005, Drawer CA03, Bartow, FL 33831. Fax (941)534-6534. Phone (941)534-6583. M/F/D/V.

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SOFTWARE DEVELOPER Analysis, design and development of client/server applications in open environments and distributed database systems. Responsibilities include scoping, designing and developing areas of functionality. Designing and developing GUIs and databases and perform system testing and maintenance for software applications. Requires MS in MIS or Computer Science. One year experience in C/UNIX development. Demonstrated knowledge of shell programming, GUI development in MS-Windows environment, Oracle and SQL. Good communication and presentation skills. 40 hrs/per wk (8:00 a.m. to 5:00 p.m.) $59,500.00/yr. Send two resumes/respond to Case# 71340, PO Box 8968, Boston, Ma 02114.

SYSTEMS ANALYST GAITHERSBURG, MD. DESIGN AND DEVELOP OF OBJECT ORIENTED SOFTWARE FOR CLINICAL INFORMATION SYSTEMS IN WINDOWS NT AND AIX ENVIRONMENTS USING BOOCH AND RAMBAUGH METHODOLOGIES. DEVELOP GRAPHICAL USER INTERFACE CODE USING VISUAL C++, SYMANTEC CAFE, JAVA (JDK1.1) AND JAVA SCRIPT. DEVELOP INTERNET BASED CLIENT-SERVER CODE USING C++, CGI, PERL, DB2, MQSERIES AND NETWORKING TECHNIQUES (TCP IP, DCE, PIPES, WINSOCK 1.1.) MS COMPUTER SCIENCE PLUS ONE YEAR EXPERIENCE IN THE JOB OFFERED. KNOWLEDGE OF MAJOR DATABASE PRODUCTS INCLUDING DB2/6000. 40 HRS/WK, 9-5, $60,000/YR. SEND LTR/RES. IN DUP TO JOB ORDER # 9679454, DOL LICENSING AND REGULATION, 1100 NORTH EUTAW ST. RM 201, BALTIMORE, MD 21201

Programmer-Analyst required by specialized software development and consultancy company. Duties: Development of portable software across multiple platforms such as Windows and OS/2. System analysis, design and development of software in heterogeneous platforms such as Win 32 bit architecture using Win32 SDK, MFC, Microsoft Visual C++ on NT and X Windows/Motif on UNIX. Participate in various phases of software development including support and maintenance. Participate in release engineering using tools such as Install Shield and cutting diskettes for a product. Job required to be performed by traveling to various unanticipated client sites throughout the United States, as assigned. Requirements: A Bachelor's degree in either Math or Engineering, or Computer Science or Science and two years experience either in the job offered or in the Related Occupation to a Systems Engineer. Salary: $55,000/Year 40 Hrs/Wk, 8:00AM to 5:00 PM. Submit two copies of the resume to Case # 71314, P.O. Box 8968, Boston, MA 02114.

Clarkson University

Manager of Personal Computer Systems

Candidate will manage and participate in the activities of the Personal Computer Services group in supporting all aspects student, faculty and staff use of personal computers in the University's instructional, research and administrative activities. B.S. in Science, Engineering or a closely allied discipline, or equivalent experience, involving extensive computer use of personal computers and computer networking. Three years of professional employment in a computer services position supporting the use of personal computers, managerial experience and work experience in personal computer support of education and/or research at the university level is preferred; familiarity with desktop and network PC applications employed in a heterogeneous computing environment incorporating personal computers and RISC workstations, Windows 3.1/95/NT, Netware, and UNIX operating software; and TCP/IP and IPX networking protocols. To be guaranteed full consideration, please submit letter of application and resume by October 31, 1997 to Ms. Gwendolyn Mitchell, Director of Human Resources, Clarkson University, PO Box 5542, Potsdam, NY 13699-5542. Clarkson University is an AA/EOE. POS # 29-97

NACCB

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REGIONAL SCOPE

Defensive Measures

By Alan R. Earls

KEVIN ROSE/ATLANTA CONVENTION AND VISITORS BUREAU

Faced with a desperate hiring market, IS managers are putting more emphasis on retaining the IS workers they already have

WHEN A KEY information systems staffer recently left Georgia Tech because his spouse needed to move, Rich LeBlanc didn't worry. Nor did he worry when shortly after another staff member finished an advanced degree and went looking "for much more money elsewhere."

LeBlanc, associate dean for the college of computing at Georgia Tech, says he rarely worries about finding information systems talent. In his case, graduates from the college provide a steady stream of recruits. But despite higher salaries at many companies in the region, LeBlanc says be still manages to keep turnover low at the computer center. That's because he gives his new recruits a chance to do high-level work.

Although LeBlanc's opportunities differ from those faced by many local hiring managers, his determination to play it smart in recruitment and retention is typical of Atlanta IS organizations. Many Fortune 500 companies and large government agencies are huddled around the same pool of talent in metro Atlanta, so IS managers are using every trick in the book.

Salaries and training:
Paying through the teeth

Companies such as Fiserv, Inc. and Lanier Worldwide, Inc. are focusing on pay.

"We are paying what we think is more than fair — about 15% above market rates," says Larry Green, senior vice president of information systems at Fiserv. "We are also motivating our people by putting more money into training," Green says, even when the skills involved are outside the normal compass of an individual's job.

Green says the wallet-fattening, skill-strengthening approach has been a winner on the retention side of the equation. There was no turnover in his 132-person department for the calendar year. But recruitment is still a problem, he says.

Retention bonuses:
Reducing your "risks"

Tom Mangan, vice president for IS at Lanier Worldwide, tells a similar tale. A departmentwide review process has identified IS staffers at risk of being lured or raided by outside recruiters. Those employees are especially vulnerable because of a combination of salary factors and demand for their particular skill sets. As a result, those individuals have been given a onetime pay upgrade.

Lanier has adopted "staying bonuses" valued at $10,000 to $30,000. "They apply for a two-year period, and you must meet key expectations and stay for the full period," Mangan says.

Referral bonuses:
It pays to know somebody

HBO & Company also implements bonuses for retention, although with caution, says Susan Slater, manager of recruiting. The company pays close attention to salary studies performed by industry groups. The upshot has been that HBO now has a $1,000 per year training budget reserved for each employee. Bonuses also are available for selective use in attracting key talent sets. The most substantial funding is reserved for an employee referral program, which provides a $5,000 finder's fee for bringing a new employee aboard.

Work ethic:
A more nobler cause

Through choice or necessity, some Atlanta IS operations are putting dollars second. Toby Burke, chief of the recruitment branch at the Centers for Disease Control (CDC), says the comparative rigidity of government human resources policies hasn't made his life any easier.

While salaries in the private sector have skyrocketed in recent years, Burke says a reexamination of CDC IS salaries was recently mandated by the Office of Management and Budget. The result is that many employees will be facing a salary reduction in coming years, Burke says.

But Burke says even the government recognizes that some people with hot, in-demand skills will still need incentives beyond the feel-good ones. For them, Burke says there are a limited number of bonuses available: relocation bonuses if someone is "the only candidate available," and retention bonuses up to 20% of an individual's current salary. But that's available only if you can prove you have had a job offer.□

Earls is a freelance writer in Franklin, Mass.

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IS salaries in Atlanta

A look at how total compensation expectations (base salary, plus bonuses) for the top 10 job titles in the Atlanta regional market compare with the national average for IS professionals

JOB TITLE	ATLANTA SALARY	NATIONAL AVERAGE
Chief information officer	$138,000	$123,000
Director of systems development	$88,000	$82,000
Director of IS/MIS	$80,000	$80,000
Director of networks	$80,000	$74,000
Director of IS operations	$79,800	$73,000
Manager of voice and data communications	$69,000	$66,000
Project manager, systems and programming	$68,000	$67,000
Project leader	$61,000	$62,000
Computer operations manager	$59,000	$56,000
Database manager	$56,000	$61,000
Webmaster/ Web designer	$56,000	$50,000
Technical support manager/help desk manager	$55,000	$46,000

Source: Computerworld's 1997 Annual Salary Survey

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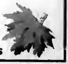

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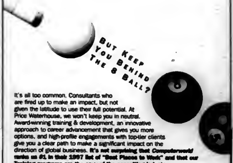

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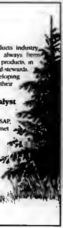

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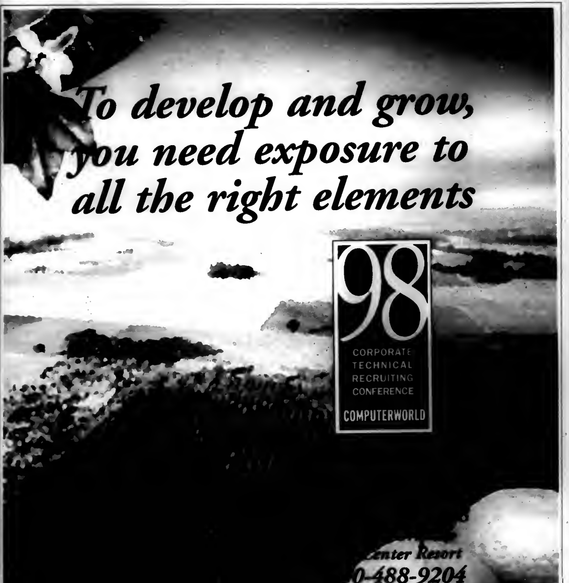
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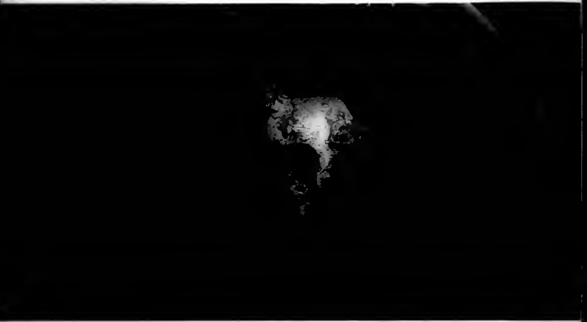

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The Week in Stocks

Gainers

P E R C E N T

Banyan Systems Inc.	28.6
MathSoft	31.3
Secure Computing Corp.	29.7
Infoseek Corp.	21.5
McAfee Associates	20.9
Edify Corp.(H)	20.5
Cirrus Logic	17.8
Logic Works(H)	16.3

D O L L A R

McAfee Associates	11.25
America On-Line(H)	8.94
Peoplesoft	7.13
Compuware Corp.(H)	6.63
Storage Technology	6.19
Arbor Software	5.75
Gateway 2000 Inc.	5.00
SEI Corp.(H)	5.00

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INDUSTRY ALMANAC

Unix world faces shake-up

It isn't easy being a Unix systems vendor these days.

With mainframes making a resurgence and Windows NT servers firing users' imaginations, it may seem like Unix is getting squeezed out of the market.

And Silicon Graphics, Inc. (NYSE:SGI) last week announced that it expected its upcoming results to be far lower than originally anticipated. That prompted investors to drop SGI's stock like a hot potato (see chart). And market watchers such as Salomon Brothers, Inc. in San Francisco lowered earnings expectations on SGI for the coming year.

But the Unix server market is still growing at 25% per year, with $35 billion in sales last year. That means the market is still a solid investment opportunity, especially for pure Unix players such as Sun Microsystems, Inc. (Nasdaq:SUNW), but the players involved are experiencing some shake-ups.

Salomon Brothers analyst John Jones says SGI was switching from a scientific and engineering sales focus to a role as a more commercial-oriented workstation and server provider. But the road has been rough, especially after stellar results in June. SGI's CEO Edward McCracken admits "our server business had a disappointing quarter. We clearly need to intensify our marketing and sales programs."

And that is a major problem among the smaller players in the market. Companies with strong global reach, low cost and the service to back it up are bound to get the lion's share of new deals, says Bret Rekas, an analyst at San Francisco-based Robertson Stephens & Co., in a recent report.

So the giants of the Unix world, such as Hewlett-Packard Co. (NYSE:HWP) and IBM, (NYSE:IBM) can more readily make deals than the smaller players.

That is why Rekas sees Data General Corp. (NYSE:DGN) and Sequent Computer Corp. (Nasdaq:SQNT), both smaller Unix vendors branching into Windows NT systems, as strong acquisition targets. — Tim Ouellette

FERVOR FOR SERVERS

Most Unix server vendors are weathering the Windows NT storm, but SGI recently has fallen on hard times

Vendor	July 25	Oct. 9
SGI	25¼	17⅞
Sun	46⅛	45½
Hewlett-Packard	65¾	68⅝
Data General	30⅜	25
Sequent	27⅞	26½

Exch	52-Week Range			Oct 10 2 pm	Wk Net Change	Wk Pct Change
COMS	81.18	24.00	3COM Corp	55.38	4.38	8.5
AIT	71.75	54.00	AMERITECH Corp.	66.94	-2.00	3.6
ASND	88.25	30.00	Ascend Communications	33.38	0.18	3.5
T	47.44	30.75	AT&T (H)	45.31	1.38	4.3
BNYN	6.00	1.19	Banyan Systems Inc	3.63	0.81	28.6
BAY	41.81	15.38	Bay Networks Inc. (H)	40.81	1.00	2.2
BEL	84.88	50.75	Bell Atlantic Corp (H)	80.44	-2.00	-2.1
BLS	48.44	36.25	BellSouth Corp (H)	47.18	-1.81	-3.7
BRKT	42.25	9.25	Brooktrout Technology	15.75	-0.75	-4.5
CS	46.50	33.88	Cabletron Systems	28.81	1.00	3.1
CGRM	30.00	8.63	Centigram Communications (H)	20.50	2.00	10.8
CSCO	87.25	45.25	Cisco Systems Inc.	81.88	3.00	3.8
CMNT	7.38	3.31	Computer Network Tech.	5.19	-0.13	-2.8
DIGI	37.75	13.63	DSC Communications	30.63	0.63	2.1
FORE	41.50	10.00	FORE Systems Inc	20.38	2.00	10.6
GDC	13.38	5.88	General DataComm Inds.	7.00	0.25	3.6
GSX	53.00	36.13	General Signal Networks	42.31	-1.25	-2.8
GTE	52.25	38.00	GTE Corp (H)	50.00	0.25	0.5
LU	80.75	41.75	Lucent Tech	80.19	1.25	1.6
MADGF	16.13	4.50	Madge Networks NV	8.75	0.38	7.4
MCIC	45.38	25.00	MCI Communications Corp	33.31	1.00	-2.8
NETM	8.88	6.88	NetManage Inc.	4.00	0.25	6.5
NTRX	8.88	1.44	Netrix Corp	2.13	0.25	13.3
NCDI	16.25	3.88	Network Computing Devices	10.88	-0.06	-0.6
NWK	22.88	10.88	Network Equipment Tech.	20.13	2.88	15.4
NETG	50.25	11.13	Network General	21.38	1.56	5.8
NN	69.10	26.50	Newbridge Networks Corp (H)	64.25	0.88	1.4
NT	115.88	32.75	Northern Telecom Ltd. (H)	107.88	-0.63	-0.6
NOVL	13.00	6.28	Novell Inc	9.44	0.88	10.3
ODSI	19.21	9.75	Optical Data Systems Inc	11.00	-0.25	-2.0
PCTL	17.88	8.25	PictureTel Corp	10.75	-0.50	-4.7
PTON	4.25	1.31	Proteon Inc	2.06	0.13	6.5
RACO	6.00	1.38	Racotek Inc	1.94	-0.06	-3.1
RETX	8.25	3.38	Retix	7.00	0.75	11.9
SBC	64.88	47.38	SBC Communications (H)	60.38	1.44	2.3
SFA	50.94	15.25	Scientific Atlanta Inc.	22.13	0.81	3.8
SHVA	56.75	5.20	Shiva Corp	14.19	1.56	12.4
FON	54.38	37.00	Sprint Corp (H)	50.75	-3.00	-5.6
SMSC	18.11	8.25	Standard Microsystems Corp.	15.38	-1.25	-7.5
USW	41.00	29.25	U S West Inc. (H)	38.63	-0.81	-2.1
XIRC	31.51	7.50	Xircom	11.38	-0.50	-4.0
XYLN	58.25	18.88	Xylan Corp	22.88	-0.75	-3.4
AAPL	29.38	12.75	Apple Computer Inc	22.25	0.25	1.1
CPQ	79.56	20.50	Compaq Computer Corp	58.69	1.13	1.8
DELL	102.35	35.38	Dell Computer Corp (H)	88.81	-0.88	-0.3
GTW	40.25	19.38	Gateway 2000 Inc.	36.31	5.00	16.0
HWP	72.94	42.75	Hewlett-Packard Co.	68.44	1.10	1.6
MUEI	25.88	12.63	Micron Electronics Inc	19.88	-0.31	-1.8
NIPNY	74.88	53.50	NEC America	61.88	0.63	1.0
SGI	30.81	12.63	Silicon Graphics	17.38	-10.19	-37.3
SUNW	59.91	23.38	Sun Microsystems Inc	46.44	1.38	3.8
DGN	17.34	13.38	Data General Corp	25.38	1.44	5.4
DEC	50.00	25.00	Digital Equipment Corp (H)	48.00	4.94	11.0
IBM	109.44	82.00	IBM	102.13	-0.38	-0.3
MDCD	8.75	0.88	Meridian Data Inc	5.38	-0.31	-5.5
PRCM	20.15	9.00	ProCom Technology Inc.	18.13	1.11	14.8
SQNT	31.25	12.63	Sequent Computer Sys	20.56	1.00	5.0
TEXM	7.88	3.88	Sequoia Systems Inc	5.31	-0.44	-7.6
SRA	40.75	21.25	Stratus Computer Inc.	40.88	3.38	9.1
UIS	15.75	5.75	Unisys Corp	15.13	0.50	3.6
ADBE	51.13	32.50	Adobe Systems Inc.	48.88	1.00	2.1
AMSWA	10.13	4.63	American Software Inc. (H)	11.19	1.38	7.3
APLX	10.38	3.13	Applix Inc	8.81	1.38	12.3
ARSW	51.38	17.38	Arbor Software	50.25	5.75	12.9
ADSK	51.15	27.38	Autodesk Inc. (H)	48.63	-0.75	0.4
BGSS	38.00	21.88	BGS Systems Inc (H)	31.50	4.00	11.3
BMCS	69.00	39.63	BMC Software Inc	68.38	-0.44	-0.6
BOOL	35.25	16.63	Boole and Babbage	30.75	1.75	6.0
BORL	10.88	4.75	Borland Int'l Inc. (H)	9.63	-0.38	-3.7
BOBJY	18.00	6.63	Business Objects	11.38	1.13	11.0
CAYN	8.25	3.00	Cayenne Software Inc.	6.03	0.81	15.5
CNTR	5.38	1.13	Centura Software	2.44	-0.50	-17.1
CHKPF	56.35	15.63	Checkpoint Software	54.13	6.38	13.3
COGNF	50.50	31.50	Cognos Inc.	50.44	1.63	3.3
CA	78.19	37.25	Computer Associates (H)	76.75	1.25	1.7
CVN	18.88	1.88	Computervision Corp	3.31	-0.31	-8.6
CPWR	69.25	22.50	Compuware Corp (H)	68.25	6.63	10.8
CSRE	18.88	6.75	Comshare Inc. (L)	6.88	1.00	14.8
COSFF	9.69	3.75	Corel Corp (L)	4.13	0.06	1.5
DWTI	6.69	2.25	Dataware Technologies Inc	4.75	-0.19	-3.8
FILE	26.50	9.88	FileNet Corp	20.38	2.18	10.0
FRTE	47.00	7.25	Forte Software	14.38	1.31	10.0
FTPS	8.63	3.38	FTP Software Inc.	3.72	-0.34	-8.5
HUMCF	44.25	22.00	Hummingbird Comm. Ltd	40.75	0.56	1.4
HYSW	32.00	13.00	Hyperion Software Corp	31.25	0.38	1.2
IRIC	18.88	11.13	Information Resources	18.75	1.00	5.6
IFMX	29.38	5.88	Informix Corp	7.25	0.25	3.6
INGR	12.38	6.25	Intergraph Corp	11.00	-0.13	-1.4
LEAF	3.69	0.81	Interleaf Inc	2.88	-0.06	-2.0
ISLI	18.38	8.25	Intersolv Inc	15.63	0.63	4.2
INTU	40.25	20.88	Intuit Inc	31.13	0.25	0.8
TLC	39.75	8.50	Learning Co. (The)	18.88	-0.88	-5.9
LGWK	12.13	4.18	Logic Works (H)	11.63	1.63	16.3
MAPS	13.38	7.38	MapInfo Corp	9.00	0.13	1.5
MATH	5.25	2.19	MathSoft	3.44	0.81	31.1
MCAF	70.50	30.00	McAfee Associates	65.00	11.25	20.9
MENT	13.13	8.00	Mentor Graphics	11.00	-1.19	-9.7
MIFGY	39.13	12.50	Micro Focus (H)	40.38	1.38	3.5
MGXI	8.88	4.00	Micrografx Inc. (H)	8.38	0.88	12.2
MSFT	150.75	65.63	Microsoft Corp	137.38	2.38	1.7
OBJS	1.12	0.87	ObjectShare, Inc (L)	1.13	0.03	2.9
ORCL	42.13	22.00	Oracle Corp	36.38	-0.69	-1.9
PMTC	64.25	37.38	Parametric Technology	48.38	0.88	1.8
PSFT	56.88	30.69	PeopleSoft	63.25	3.13	12.7
PTEC	19.75	11.00	Phoenix Technologies	15.13	1.56	11.4
PSQL	13.75	9.38	Platinum Software	11.38	-0.06	-0.5
PLAT	25.88	10.25	Platinum Technology	23.31	1.44	6.5
PRGS	24.53	12.63	Progress Software Corp	23.38	2.25	10.7
RNBO	36.50	11.75	Rainbow Technologies Inc. (H)	26.50	0.50	1.9
REDB	28.38	5.88	Red Brick Systems Inc.	7.00	-0.44	-4.3
ROSS	9.75	1.75	Ross Systems, Inc	4.13	0.25	6.5
SAPE	61.00	30.38	Sapient Corp	50.00	3.00	6.4
SCOC	8.63	3.13	SCO Inc.	5.38	0.19	3.6
SDTI	64.88	21.38	Security Dynamics Tech.	49.00	4.75	10.3
SOTA	16.50	8.88	State of the Art	15.38	0.25	1.6
SSW	50.75	37.25	Sterling Software Inc.	45.81	-0.38	-0.8
SDRC	30.00	13.13	Structural Dynamics Research	30.00	2.44	8.9
SYBS	23.00	12.13	Sybase Inc. (H)	23.00	2.94	14.6
SYMC	25.75	9.88	Symantec Corp	22.25	-1.06	-4.6
SNPS	49.00	23.75	Synopsys	49.00	0.19	0.4
SSAX	13.38	5.88	System Software Assoc.	8.88	-1.00	-10.5
SYSF	10.38	7.88	Systemsoft Corp	8.88	-0.31	-3.4
TRUV	4.63	1.38	Truevision Corp	3.75	0.31	9.1
VIEW	50.18	8.38	Viewlogic Systems (H)	23.38	1.38	6.4
VMRK	11.75	8.88	VMark Software Inc. (H)	9.50	1.13	13.6
WALK	18.25	10.50	Walker Interactive Systems	10.31	-0.44	-4.1
WALL	19.13	12.25	Wall Data Inc.	18.13	-2.13	-10.5
WANG	24.25	10.00	Wang Laboratories Inc. (H)	23.88	1.44	6.5
AMZN	57.75	15.75	Amazon.com	41.13	-0.63	-1.5
AOL	88.75	20.38	America On-Line (H)	84.50	8.94	11.8
ATHM	30.63	10.63	At Home Corp (H)	28.75	2.69	10.3
CSRV	14.56	6.63	CompuServe Corp	11.44	-0.50	-4.2
EDFY	21.75	8.88	Edify Corp (H)	19.88	3.38	20.5
XCIT	35.00	3.88	Excite, Inc	33.44	4.31	14.8
SEEK	12.38	4.38	Infoseek Corp	12.38	2.19	21.5
LCOS	38.38	8.50	Lycos Inc	33.38	-1.50	-4.3
NETC	19.13	7.88	Netcom On-Line	14.31	1.19	9.0
NSCP	41.88	20.38	Netscape Comm. Corp.	30.56	2.31	8.1
OMKT	19.38	8.88	Open Market Inc	15.50	0.75	5.1
PSIX	14.38	5.38	PSINet	8.75	1.38	18.8
QDEK	7.13	5.38	Quarterdeck Corp	3.00	-0.06	-2.5
RAPT	23.75	8.88	Raptor Systems	15.38	-0.63	-3.7
SCUR	13.00	4.75	Secure Computing Corp	12.00	2.75	29.7
SPYG	20.00	6.88	Spyglass Inc	9.63	0.75	8.4
YHOO	58.63	11.25	Yahoo! Inc. (H)	53.88	-2.00	-3.6
AMD	48.50	11.63	Advanced Micro Devices	34.38	1.50	4.6
ADI	36.25	18.75	Analog Devices Inc	35.44	0.44	1.3
CHPS	60.38	7.38	Chips and Technologies	18.13	-0.75	-4.0
CRUS	24.25	9.00	Cirrus Logic	17.38	2.63	17.8
CY	16.34	10.50	Cypress Semiconductor Corp.	13.13	0.50	4.0
CYRX	34.63	14.88	Cyrix (H)	34.56	0.94	2.8
INTC	102.00	40.63	Intel Corp	91.63	0.13	0.1
LSCC	74.38	39.63	Lattice Semiconductor	66.75	3.13	5.0
LSI	40.88	23.50	LSI Logic Corp	30.25	-1.38	-4.4
MCRL	64.88	9.13	Micrel Semiconductor Inc.	37.63	-0.19	-0.5
MU	63.00	18.88	Micron Technology	38.00	3.94	11.6
MOT	90.38	44.13	Motorola Inc	74.44	2.38	3.3
NSM	45.38	11.63	National Semiconductor	43.50	1.50	3.5
TXN	142.00	47.50	Texas Instruments	137.38	3.44	2.6
VLSI	38.25	14.88	VLSI Technology	30.88	-0.94	-2.3
XLNX	50.00	31.38	Xilinx	44.63	-2.00	-4.3
ZLG	38.50	17.88	Zilog Inc	31.50	0.75	2.4
ADPT	54.13	28.63	Adaptec Inc. (H)	53.00	2.38	4.7
APCC	31.00	14.63	American Power Conversion	29.31	1.44	5.0
CREAF	38.00	3.38	Creative Technology Ltd.	24.88	-1.13	-4.3
RACE	50.00	8.50	Data Race Inc.	5.88	0.00	0.0
DTM	12.50	6.75	Dataram Corp	9.00	-0.44	-4.5
EMC	60.13	19.38	EMC Corp (H)	62.94	1.06	1.7
EMLX	31.88	14.13	Emulex Corp	19.13	0.50	2.8
ESCC	34.25	20.00	Evans and Sutherland (H)	32.88	0.50	1.5
EXBT	17.00	8.00	Exabyte	11.00	0.00	0.0
ISLP	2.38	1.38	Intelligent Instl. Systems	1.16	-0.16	-11.9
IOM	29.13	14.13	Iomega Corp	20.13	-0.75	-3.6
IPLS	3.81	0.94	IPL Systems Inc.	1.75	-0.81	-31.7
KMAG	86.75	35.31	Komag Inc	31.88	1.13	3.7
MTSI	34.88	16.63	Micro Touch Systems Inc.	20.50	2.31	10.2
MTIC	17.19	2.00	MTI Technology Corp (H)	17.19	5.19	38.0
PNCL	6.75	3.88	Pinnacle Micro Inc.	0.84	-0.09	-10.0
AQM	8.88	2.38	QMS Inc.	2.88	0.13	4.6
QNTM	43.25	9.38	Quantum Corp	38.94	3.19	9.3
RDUS	1.88	0.19	Radius Inc.	0.58	-0.06	-9.3
SEG	56.25	18.75	Seagate Technology	34.38	1.19	3.5
SOS	18.63	9.75	Storage Computer Corp	11.00	-0.50	-4.3
STK	55.63	33.38	Storage Technology	55.63	6.19	12.5
TEK	66.63	28.75	Tektronix Inc.	64.63	0.50	0.8
WDC	54.75	20.88	Western Digital Corp	41.38	2.25	5.2
XRX	88.13	48.63	Xerox Corp. (H)	80.88	-0.75	-0.9
AMSY	37.13	15.75	American Mgmt. Systems	18.88	-0.25	-1.3
ANLY	48.50	21.25	Analysts Int'l (H)	43.88	3.00	7.3
AUD	51.38	28.38	Auto Data Processing (H)	50.06	-0.63	2.3
BDMI	28.63	10.75	BDM International Inc.	21.38	1.38	6.9
CATP	50.94	21.63	Cambridge Tech. Partners	46.44	0.56	1.2
CEN	53.13	18.50	Ceridian Corp	47.75	-0.13	-0.3
CDO	33.88	20.00	Comdisco Inc.	31.88	0.75	2.4
CPU	38.63	15.25	CompUSA Inc. (H)	36.63	1.00	2.8
CHRZ	49.38	16.25	Computer Horizons	40.13	-0.63	-1.5
CSC	80.13	37.88	Computer Sciences	72.63	0.13	0.2
TSK	49.38	19.38	Computer Task Group	41.31	-2.00	-4.6
EGGS	11.13	3.88	Egghead Discount Software (H)	10.31	0.44	4.2
EDS	63.38	30.75	Electronic Data Systems Corp	37.88	-0.75	-2.0
ICO	40.63	18.75	Inacom Corp	29.31	2.31	8.6
INEL	10.75	2.38	Intelligent Electronics	4.38	-0.44	-9.1
KEA	38.00	11.38	Keane Inc. (H)	35.88	2.94	9.0
MICA	29.75	12.31	MicroAge Inc	28.25	1.13	4.0
PAYX	42.50	25.63	Paychex	38.00	-0.13	-0.3
PMS	64.69	34.38	Policy Management Sys.	61.25	-2.50	-3.8
REY	28.63	15.75	Reynolds and Reynolds	25.63	-1.44	-5.3
SCB	32.25	10.75	SCB Computer Tech. Inc.	31.13	0.00	0.0
SEIC	41.25	16.75	SEI Corp (H)	40.38	5.00	14.1
SMS	61.75	30.75	Shared Medical Systems	51.94	0.44	0.8
SSPE	13.38	10.00	Software Spectrum Inc	12.00	-0.50	-4.0
SDS	27.13	16.88	SunGard Data Systems	30.88	1.38	4.8
VST	19.75	6.13	VanStar Corp	10.00	1.00	11.1

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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Foreign labor costly, mobile

CONTINUED FROM COVER 1

stories just like that from a slew of U.S. companies. He has to tell them they are out of luck.

"I've also known cases where a foreign IT worker has gotten a visa approval from a third company, then gone back to the second company and said, 'This is what they're offering me.' And the second company will match it," Khanna said. "The bottom line is they're making employers bid against one another."

PAY PREMIUM

That factor alone is increasing foreign labor costs significantly, the lawyer said. For example, the average salary of the Indian programmers he has worked with is $5,000 to $10,000 more than their American counterparts, Khanna said. Of course, labor costs are up by about 20% for U.S. information technology professionals as well, according to William M. Mercer, Inc., a New York compensation consultancy.

Yet for companies wrestling with whether to help with visas as a way to attract foreign talent, money is just part of the story. Many foreign IT professionals, like their U.S. counterparts, also want to work on the hottest projects and use the latest technologies. And therein lies the catch-22.

Spooked by the prospect of a quick exit by a key developer, many U.S. employers are reluctant to include foreign talent on top project teams. Not only would they lose a key contributor, but they also could end up sacrificing their investment in processing visas and green cards, which can take up to two years and run as high as $10,000.

Consider Ramesh Dorairaj, a 28-year-old native of India. After seven months, he left his software developer job at the New York law firm that sponsored his first three-year work visa. He joined RSG Systems, Inc., also in New York, which sponsored his current visa.

The move netted Dorairaj an immediate 10% increase in pay. But more money, he said, wasn't the main reason for the switch. What he was after was broader IT experience. "At the law firm, I was typically doing a lot of reports. But the main thing I wanted was different projects," he said. Workers with different kinds of experience advance faster, he added.

Today, after a little more than a year at RSG, Dorairaj's resume includes work on several Internet and intranet projects in the entertainment and publishing industries. And that's exactly how RSG executives said they planned it.

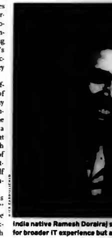
"It takes time and effort to instill a sense of loyalty, and the way we're doing it is to constantly challenge the staff and give them a clear advancement path," said Mukesh Sehgal, president of the 60-person consulting firm. About half the staff is foreign-born.

"Compensation is just one part of it," Sehgal said. "People don't wake up thinking, 'This is how much I'm going to make today, so I better get to work.'"

At the other end of the spectrum is Star Enterprises, a $9 billion Houston-based oil company that has a company policy against sponsoring visas for foreign IT professionals.

"We don't want to incur the overhead," said Gary Richardson, director of IT services. As a result, the 30 or so foreign-born IT professionals who work at the company are contractors.

But that poses a whole new set of challenges, he added. For starters, Star's contract workers are assigned only "commodity work in a standard development environment," which tends to accelerate turnover among workers in search of hot projects.



India native Ramesh Dorairaj switched jobs for broader IT experience but also upped his pay by 10%

"When they get bored, they move," Richardson said. He said turnover has run as high as 50% in the past year. On the other hand, "We don't let contractors come in and do one-of-a-kind development because the odds are that they are going to leave you with a legacy problem you didn't want," he said.

The bottom line is that "different things motivate different people," said Amy Naples, who has interviewed and hired hundreds of foreign-born IT professionals as a recruiter at Bluestone, Inc., a software and consulting firm in Mount Laurel, N.J. □

E-mail users: Pay up!

CONTINUED FROM COVER 1

chargeback plans are becoming more common as information systems departments try to rein in skyrocketing E-mail costs and reduce administration costs.

Administrators at many sites said they charge a baseline fee for E-mail services — typically $30 to $50 per user per month. The most common ways to tack on charges seem to be to charge by volume of mail sent or amount of storage used.

In many companies, messaging is viewed strictly as an overhead item. Information systems wants to control costs, but it also wants to be able to say to top management, "Here is why it's costing so much." Excessive use of E-mail burdens networks, and oversized archives are expensive to back up.

Yet workers clearly are becoming more reliant on E-mail. According to the Electronic Messaging Association (EMA) in Arlington, Va., E-mail transmissions per person per week increased from 190 last year to 215 this year.

DON'T BE AN E-MAIL ABUSER

① Move nonessential E-mail messages off local disk onto a shared disk or floppy

② Instead of attaching large files, point people to a URL

③ Avoid replying to messages with a string of "history" messages attached

④ Don't be an E-mail pack rat

⑤ Avoid excessive use of "cc:"

The growing dependency on E-mail and the associated costs are forcing more companies to track messaging expenses, something that was common in mainframe mail systems, said Joyce Graff, an analyst at Gartner Group, Inc. in Stamford, Conn. "In many cases, the [chargeback] capability was built right into the [mainframe] E-mail system."

That isn't the case with client/server messaging systems, and there has been a shortage of third-party tools that can address this shortcoming, she said.

The motivation for tracking E-mail use — and making the departments with the heaviest users pay — isn't to discourage people from sending E-mail, users said. The EMA estimates users can send 19 E-mails for a dollar, so E-mail is likely to be less expensive than a telephone call, fax or overnight package.

Rather, the idea is to justify the growing cost of messaging networks and fairly distribute that cost to business units.

TARGETING INDIVIDUALS

That can be key in places such as the U.S. Department of the Treasury in Washington, where E-mail usage has soared 900% in the past year.

The agency charges groups based on the volume of mail they send. It is considering using software from Tally Systems Corp. in Hanover, N.H., that would let the Treasury Department track messaging down to the end-user level.

"There can be a small [group of users] that sends the stats off the chart for the whole unit," said Michele Rubenstein, messaging program director at the agency.

At Digital Equipment Corp., there is a baseline charge for E-mail, and users can send as many internal messages as they wish. But departments are charged for messages that are sent to X.400 mail systems or fax machines because the company incurs extra charges for those messages.

Separately, the company's 60,000 Microsoft Corp. Exchange users are given 50M bytes of mail storage space, but they are charged for anything above that. Exchange servers hold only 16G bytes of mail, said Dan Martin, Digital's director of individual computing productivity.

Companies also use chargeback plans to reduce administration costs. Digital is on the high end, charging a $1,000 fee to restore a message that was deleted by an end user. That's because the restoration process is particularly time-consuming in Exchange. Digital has seen requests for such services drop considerably since it began charging a fee.

At Countrywide, getting users to off-load mail to shared databases will make it more valuable to the corporation. □

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Rhapsody isn't the smash hit Apple needs

David Coursey

Having seen a sneak preview of Apple's new Rhapsody operating system, I can tell you one thing for certain: It won't save the company. Not overnight, and probably not ever. That doesn't make it a bad operating system, just an insignificant one.

Today, Apple begins shipping the developer's release of Rhapsody to anyone who wants it. This is the first of three verses of Rhapsody to be released by next summer. Remarkably, the development project is pretty much on schedule.

All this may well be for naught. Apple needs a win now, not in the five years it will take to establish Rhapsody. And it's hard to believe Rhapsody will make even as much noise as IBM's OS/2, an operating system that is perpetually gasping for air under the marketing weight of Microsoft's Windows NT.

Server operating systems build market slowly. Once a server is running, sensible people don't swap its operating system just for kicks.

And Rhapsody faces another challenge: Apple must persuade developers to build server applications that people want to buy, or give them great tools so they can build their own applications.

Rhapsody is in trouble on both fronts.

There isn't a huge installed base of server applications whose next releases could easily support it. Apple touts computer-aided design and publishing workflow systems as candidates, but will there be enough of those to really make a difference? And it's doubtful that scads of commercial developers will bet development bandwidth on an operating system whose prior incarnation drew fewer than 250 customers.

Some will, of course. But I suspect introduced-on-Rhapsody applications will be high-end — not the sort of products that will sell lots of copies of the operating system or Apple hardware. And what about corporate developers? If Steve Jobs is as smart as he likes people to think be is, why didn't the Microsoft deal include support for Rhapsody in Microsoft tools suites? Skip the $150 million, Bill. Rhapsody needs cool tools and assurance from Redmond that it's not an NT rival. Which do you think is most likely?

Apple and Metrowerks, Inc., meanwhile, are building tools for Rhapsody. But the masses don't want to learn more tools, especially ones that give them access only to a minor operating system. Yes, you'll be able to program for Rhapsody in Java and HTML, but what will that give you that Windows NT won't? A fair amount, actually, but only if you use proprietary Rhapsody Java programming interfaces or Apple's WebObjects tool kit.

To be fair, the Rhapsody developer CD includes some early commercial-looking applications that run atop the new operating system. Some of this demo-ware looks nice, but Apple has trotted out spiffy software before — remember OpenDoc? — that never saw the commercial light of day.

From what I've seen, Rhapsody is likely to be a powerful operating system that will, at least initially, develop only a cult following. Maybe it will expand from there. If Apple can rev up its Rhapsody devotees as much as IBM has done with the OS/2 zealots, lots of developers will give Rhapsody a test-drive.

But millions of developers and end users have test-driven Macintosh only to buy Windows. I wish it weren't so, but I get a sense of deja vu — all over again.□

Coursey (david@coursey.com) is editor and publisher of "coursey.com" and host of Internet Showcase, a conference that will be held Jan. 27-30 in San Diego.

Contrarian thinking on encryption controls

David Moschella

Has anyone seen a single editorial in the IT trade press that expressed any sympathy for the federal government's interest in managing the use of encryption?

Because I haven't, I decided to write one. The computer industry needs to wake up fast before it digs itself into a hole it can't get out of.

The critics are right about one thing. Long term, Uncle Sam will never be able to restrict the world's use of encryption technology that is freely available within the U.S. and from non-U.S. companies around the world.

But despite today's headlines, export policies aren't the main issue. The real question is how the use of encryption in the U.S. will be treated. Inevitably, our global policies will stem from there.

Those who say the government should keep out use two main arguments. Most computer industry leaders say they have yet to see a feasible plan that allows for both strong encryption and rapid government access. Therefore, on grounds of pragmatism, they say the government should stay away. A second group (let's call them the 'Net Heads) says constitutional and even moral grounds should prevent the government from prying into other people's computers.

This unique combination of outdated export controls, lack of practical key-escrow alternatives and 'Net Head fervor has created the illusion of antigovernment unity.

But with a proper court order, the government can access your home, telephone or office. Unlike the 'Net Heads, I've never seen any moral or constitutional reason that computer communications should be viewed differently. To me, the only sound argument against governments having the right to intercept computer communications is that no such system is practical.

Computer executives consistently assert this. Perhaps they're right, but how hard has anyone really tried? And given all the challenges the industry has overcome, isn't it a bit early to say a practicable encryption scheme can't be done? These denials might be more convincing if our leaders at least acted as though they wanted to find a solution. But that would offend the 'Net Heads.

All this would be a passing tempest if it didn't risk seriously damaging the industry. In recent congressional testimony, FBI Director Louis Freeh noted that electronic surveillance was critical in preventing the planned New York tunnel bombings. What if someday he had to say, "The terrorists who blew up the Holland Tunnel used drug cartel money to acquire advanced weapons from organized crime interests in the former Soviet Union. We were aware of their efforts, but we could not decipher their highly encrypted communications"?

That's hardly an unrealistic scenario. Should it occur, wouldn't the high-tech business be better off if it could honestly say, "We have been working hard to develop an effective anti-encryption system; it remains one of our highest priorities"?

What's the alternative? To acknowledge that secure criminal communications is unfortunate but claim there's nothing the industry can do about it without slowing the spread of the Internet and global electronic commerce?

As the 'net begins to handle voice traffic, today's encryption technologies could eliminate the effectiveness of phone surveillance as well. Is the technology industry really prepared to tell the world that the end of criminal surveillance is just the price society must pay for the glories of the Information Age? Perhaps it is, but don't be surprised if many see that as a price not worth paying.□

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The Back Page

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SMART TIRES SPELL THE END OF FLAT TIRES

Today's cars seem to have dashboard lights for everything except the condition of the rubber that meets the road. So SmarTire USA in North Canton, Ohio, has developed a system with sensors located in the tires to monitor tire pressure and temperature. Every 60 seconds, the sensors transmit 355-MHz wireless data reports to a programmable display unit on the dashboard, which sounds a warning if tire pressure falls below a predetermined level.

Patent watch

Recently issued U.S. patents (number, inventor/assignee, date)

Computer system that takes a real-time feed of news stories and organizes them as spots on a map, showing where the news originated. Readers can zoom in on the stories from locales of interest. The black spots fade to gray and white as the story gets older. (5,671,342, Intel Corp., Sept. 23)

Microprocessor-based device that records descent data for successive skydiving jumps. Various instruments record the altitude at which the diver left the airplane, the altitude the parachute opened, the average rate of fall and the time elapsed during freefall. (5,671,162, Roy G. Werbin, Sept. 23)

Apparatus for automatic refueling of cars. A computer-connected robot engages in microwave communications with a transponder in the car to open the fuel-tank cover and guide the fuel-nozzle arm to the filler tube. (5,671,786, Sten Corfitsen, Sept. 30)

Source: MicroPatent (www.micropat.com)

Vital records

CompuCom Systems in Dallas has developed an electronic "birth certificate" for corporate PCs and servers. Before the systems are delivered, vital configuration details are stored in a database for asset management and troubleshooting during the hardware's life.

Every step you take...

Pinkerton's, founded in 1850 by the original "private eye," Allan Pinkerton, has opened a high-security advanced technology center near Atlanta to provide clients with remote monitoring capability for virtually any building in the U.S. The 24-hour control center keeps tabs on facilities ranging from ATMs and office buildings to computer rooms via audio, video and electronic monitoring.

Inside Lines

Fill 'er up

Who says computer geeks don't like to party? Not the folks at SANS, who are targeting the wilder side of systems administrators in the brochure for this month's SANS Network Security '97. It notes, "New Orleans is one of only two cities in the country that does not have a closing law for bars."

StorageTek virtually ready with virtual tape

At its user conference this week in [illegible], Storage Technology plans to announce its Virtual [illegible] Manager, a "virtual tape" system that uses [illegible] to efficiently cram mainframe tape cartridges [illegible] and Sutmyn Storage in [illegible] their virtual tape products. [illegible] Ohio-based leader in high-end tape [illegible] from the ground up with proprietary technology, according to sources.

Fusion for Domino on tap

Sources close to Lotus and Redwood City, Calif.-based NetObjects said the companies will announce next month that they have integrated NetObjects' Fusion HTML authoring tool with Lotus' Domino server. The move had been anticipated since Lotus parent IBM took an equity stake in the maker of the popular Web development tool earlier this year.

Where the wild rings are

Bell Atlantic has launched an [illegible] campaign using the voice of James Earl Jones and [illegible] from the award-winning children's book [illegible] Are by Maurice Sendak. Bell Atlantic officials chose the theme as a fitting metaphor for the wild and woolly state of the newly deregulated telecommunications industry. Ironically, Gartner Group analysts asked a large crowd of telecommunications managers from private companies meeting in Orlando, Fla., last week if any of them would make their local carrier their long-distance provider. Not one person raised his hand.

Business pizza delivery

During outages at the [illegible] Sprint network operations center, a supervisor typically [illegible] the troubleshooters. So when a pizza delivery truck [illegible] normal shift, [illegible] freaked out and came running [illegible] asking about the network problem," said Jerry Ung, director of network management control.

Awards jinx?

A software glitch at [illegible] presented its clients [illegible] inaccurate. The [illegible] Pittsburgh-based discount [illegible] caused by a posting [illegible] that this [illegible] of [illegible] spokesman [illegible] that [illegible].

RS/6000 for E-business

IBM [illegible] geted at [illegible]. The [illegible] quick setup, [illegible] and a price of less [illegible] $5,000. [illegible] comment.

Talk about conjuring up impossible images. At a recent briefing for reporters, a fairly senior Hewlett-Packard executive was waxing eloquent about the company's phenomenal growth in the PC business. But he may have gotten carried away just a tad when he said, "We are on Dell's tail. They are on our tail. So as you can see, we are neck and neck." Must be some creatures, those dogs! If you have an interesting image or an interesting news tip, send it to News Editor Patricia Keefe at (508) 820-8183 or E-mail her at patricia_keefe@cw.com.

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